BOSTON UNIVERSITY

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THESIS

# The Growth and Economic Development of the Drug Industry in the United States

by

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# PREFACE

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The youth of the United States compared to the age of other great nations has given her the advantage over them that she could profit by their experience. But in another way it worked to her disadvantage: she has from time to time entered into fields of enterprise wholly new to her in competition with old nations accustomed to them from the first, and participants in each stage of their development. But it has never entered one with less knowledge of principles and methods than that of which she is now the queen, the drug industry.

The drug industry constitutes at the present time one of the most important industries in the United States, and in volume of output, this country ranks first among the nations of the world. The task here taken is to set forth the steps whereby the drug trade has become so highly organized as well as so important. I will attempt to treat of the development of the industry keeping in mind certain economic laws and principles, particularly the law of "demand and supply". An attempt will be made to show how the demand for "cure" necessitated a supply of some form of drugs, and an oversupply of these drugs led to a demand for new uses and new outlets on the part of producers- resulting, as time marched on, in a more and more complicated and specialized trade.

This method of presentation is a development of one and one-half years of business study at the graduate school of Boston University, coupled with extensive readings in all phases of the drug industry. The major part of the data given on the early history of the drug industry was acquired from undergraduate class notes taken while studying chemistry and biology. Statistics concerning the growth of the trade were taken mostly from various bulletins and documents issued by the United States Bureau of Foreign and Domestic Commerce.

I sincerely believe that no book has before been written on this subject. All information gathered in this thesis was collected from various contacts with drug firms, studies and readings on different phases of the subject. The data so assembled is presented in a systematic and chronological order.

The work has necessarily been restricted at several points. The early history of the industry has not been given more space because progress in that period was relatively slow. In other parts, certain phases of the trade was dilated upon but briefly since an adequate discussion of all phases in the industry would be prohibitive. However, I have attempted to bring out the most pertinent and important points.

# THESIS OUTLINE

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# THE GROWTH AND ECONOMIC DEVELOPMENT OF THE DRUG INDUSTRY IN THE UNITED STATES

INTRODUCTION

The drug industry in the United States knows of no ancient history as the trades of Egypt, Persia, Arabia and England. It knows of no time when the apothecary was imbued with some of the traditions of the Alchemists, using certain harmless devices to impress the populace with the idea that there was something uncanny and faintly allied to magic in the power of its simple preparations. Even as late as I600, England's pharmacist was elevated to the pedestal of an idol in the eyes of the public. One could picture that great man with crowds of city ladies and men gathering in the dark, mysterious, bottled-paned shops, with their swinging crocodiles and rows of fat drug jars containing the syrups and simples, the conserves and ointments which formed the staples of the time. Their stock consisted primarily of crude drugs, herbs and roots, gum candles, spices and other articles even more foreign to the trade.

Unlike this situation, we can safely say that the history of the American drug industry dates back to but the relatively recent days of the Puritans. Naturally, there was illness among them with the result that the necessity of relief became the mother of the invention of cure. Here and there, a man or woman would boil down a certain herb, and by "trial and error", hit or miss, would sooner or later find one that would relieve the sick patient. Through a process of elimination, certain drugs became standard reliefs for certain ailments as well as basic

elements for the compounded medicines that are available today. It becomes evident, then, that if the American drug industry is great today, it is largely due to the ever-present"necessity", that necessity of relief, which was the seed destined to blossom into a major trade.

EARLY DEVELOPMENT OF THE DRUG INDUSTRY--- I600-I799

Although it is true that up to this time the art of curing was based on empirical experience and superstitious tradition, the seventeenth end eighteenth centuries enjoyed definite progress. Men of science, both here and abroad, began to realize that the conquest of disease depended on two things, namely, that first, the nature of the disease had to be studied until the cause was found, and secondly, that chemistry had to be regarded as a pure science undimmed by the trailing clouds of Alchemy. However firm were these resolutions, it was undisputed among the men of science that organic substances could be transformed only by power of the Vital Force. Had they gotten away from that idea, I believe that the medical and chemical sciences would have progressed more rapidly at this stage. Nevertheless, these facts concerning organics were believed to be a metaphysical certainties with the result that no one even attempted to conquer the organic world through science until as late as I828, when Wohler discovered that urea could be artificially made from isocyanate of ammonium. This incident automatically revolutionized the field of chemistry and opened the way for further experiments along that line. Its effect upon the industry as a whole will be shown in later chapters.

Although it is true that in the early stages of the drug industry the staples of the trade, the legitimate drugs and medicines, were gathered from all quarters of the globe (with the principle source of imports being Mexico- followed by

Central and South America), domestic cultivation of crude botanical drugs was constantly being encouraged. American colonists were requested to search for such articles as gums, dyes and other products, with stipends given by the Governors of the time for any new discoveries. Although, in spite of these encouragements, the progress made in the drug industry was relatively slow during the course of the seventeenth century, I believe that at this time a foundation was laid down to support the prospective tower of the trade. For instance, it was as early as 1620 that the first historical mention of drug manufacturing was made. A document was sent to Francis Wyatt, then governor of Virginia, requesting him to invite attention to the industrial possibilities that might be found in the making of "Oil of Walnuts", and authorizing him to use such apothecaries as might be necessary to assure its proper production. In the fulfillment of such a request, a small shop was opened for this purpose with the intention that the enterprise was to be conducted on a non-profit basis. Unfortunately, the product did not become as popular as was anticipated and because of the lack of adequate means of distribution through the State of Virginia, the factory was closed down.

As a direct result of this unfortunate incident, the first half of the eighteenth century did not contribute much to the development of the drug trade, except that, it may be pointed out, cultivation of crude botanicals was still being encouraged.

No business man, however, during these fifty-odd years , nurtured the thought of manufacturing these raw materials, due partly to the fact that the first factory in Virginia had failed, and partly to the fact that they understood only too well the psychological attitude of the consuming public which consisted of the belief that "simples" was the safest means of cure. It was still the creed of the populace and pharmacists, for instance, that "tar water" would relieve and even cure such ailments as scurvey, bad blood, small pox, pleurises, comsumption, coughs, ulcers, lowness of spirit, loss of appetite and other distempers. It would seem as though the people just could not pull away from the idea that they were all predestined and that the Vital Force was the only cure, using natural herbs as His Medium of curing.

Fortunately, such superstitious elements were less evident during the last half of the eighteenth century, probably due to the growing popularity of the Pharmacopoeia. It was not until I778 that the first American issue of this periodical was published. A second edition was issued by the Massachusetts Medical Society in I808, but, unfortunately, neither fostered attention or circulation with the result that for some years thereafter drugs still continued to be dispensed in accordance with the Pharmacopoeiae of foreign countries. These domestic editions, though not too successful, did educate many American druggists, particularly wholesale druggists, that the information contained in such a periodical was indispensable.

Unfortunately, there is no data from which we may estimate the number of druggists doing business in the United States at the end of the eighteenth century. The New York Directory for I786 mentions the names of only five retailers and two wholesalers. The outstanding wholesale house at this time was that of Jacob Schieffin, founded in I794. Incidently, this house which was founded nearly a century and a half ago is still doing business in New York, under the control of his descendants.

As we look back upon the early history of the American drug trade, we find that the progress made during the seventeenth and eighteenth centuries was very slow. This was probably due largely to the fact that adequate means of transportation and communication were not available thus limiting the extent to which "division of labor" could be gainfully exercised. The druggist had to manufacture his pills, package them himself and then try to sell them in his store. Because all of these operations had to be performed by one man, he had no time to specialize along any one line. Consequently, should a druggist become fortunate enough to secure a good formula or prescription, he would be rather reluctant to reveal it to his competitor, lest he should lose his trade in the sale of that medicine. In other words, there was a distinct lack of cooperation between those druggists located in neighboring areas where means of communication were available.

Such a condition was short-lived after the first success-

ful publication of the United States Pharmacopoeia and the opening of the Erie Canal. The latter factor provided the element of speed and efficiency in transportation, while the former fostered cooperation and confidence between pharmacists. Consequently, we can safely say that these two developments were unquestionably the major factors that fostered a rapid progress in the fields of manufacturing and marketing during the nineteenth century.

## DEVELOPMENT OF THE DRUG INDUSTRY --- 1800-1899

### Pharmaceutical Associations and Periodicals

As has previously been mentioned, the first two publications of the Pharmacopoeia had not been successful. However, in 1820, the first edition of the United States Pharmacopoeia appeared, and this work, which has passed through successive decennial revisions up to this time, has and is still regarded the world over as the standard in all manipulation of drugs and medical chemistry. The originators of this issue recognized the vital weaknesses adherent to the two previous publications and undertook to readjust its form. From the very first, this issue attracted public attention and immediately, instead of we importing foreign pharmacopoeiae, were exporting our own. It has since become the outstanding authority on all processes involved in the handling of drugs, from the identification of crude materials to the final stages in its preparation for the use of invalids. The names of Proctor, Maisch and Rice are inseparably connected with the early issues of this great work.

During this era, pharmacists became, more and more, extraverts with regard to the limited knowledge of drugs that they possessed. They realized that, to serve the public best, they must exchange formulas, prescriptions and general knowledge of the field. This policy resulted in the formation of the "American Pharmaceutical Assosciation" in 1852, the first association of its kind in America. The organization was composed of twenty-

one active pharmacists* It was ageed that no member was to keep from any other member information which he had acquired in the line of new formulas, discoveries and the like since the last meeting. Such meetings were held primarily to discuss matters relating to the welfare of the industry. One of the effective features of its work was the annual publication of its work and proceedings, an edition which presented a complete review of the scientific progress of pharmacy. It also rendered a monthly publication of the " American Pharmaceutical Association Journal "

This organization became so successful that I8 years later, I870, pharmacists of various states cooperated in forming State Associations, the first of which was organized in I870. The wholesalers of the west followed suit by organizing under the name of " The Western Wholesale Druggists' Association ". This was founded in I876. Five years later, I882, many of the prominent eastern druggists joined forces with the western wholesalers, at a meeting held in Cleveland, Ohio, and at this time, the name of the organization was changed to " The National Wholesale Druggists' Association ".

Still another great development during the nineteenth century along the line of publications was the pharmaceutical press. Among the most prominent periodicals that came into being , during that period, were such weekly papers as, The Oil, Paint

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* In I9I6, its membership numbered 2,490

and Drug Reporter, The Pharmaceutical Era and the Shipping List, all of New York; semi-monthlies like the American Druggist and Pharmaceutical Record, of New York, and such monthly journals as, The New Druggist, of Boston; The National Druggist, of Saint Louis; The Druggists' Circular and Chemical Gazette, of New York; The American Journal of Pharmacy, of Philadelphia; The Pharmacment-ische Rundschan, of New York. Besides these, there came into existence many College and Society publications, together with periodicals of local influence and a considerable no. of papers issued by prominent drug firms and manufacturing houses.

Effect: The advent of these associations and their publications displaced all superstitious beliefs which heretofore were inherent in the people as well as the druggists. The pharmacist no longer considered himself an idol in the eyes of the people, nor did the populace think of him as a "mystic". The druggist became aware of the fact that he was now in a competitive industry which was becoming more and more standardized. New drugs as well as new methods of preparation were constantly being introduced and made public in the Pharmacopoeia. He began to realize, also, that if he were to remain in business, he had to adopt these new policies else his competitor take his business away from him, for the Pharmacopoeia published all medicines approved by their committee, together with their uses in the relief of certain ailments. As a result, people learned these and soon began asking the druggist for the

medicines by their names.

Just as the American investor of today has faith in the stocks of those companies listed on the New York Stock Exchange, so did the people of the nineteenth century have confidence in the preparations listed in the Pharmacopoeia. Before anything was listed in the issue, it had to be fully tested and approved by their committee. For instance, it was not until I840 that the process of "percolation" occupied a place in this publication although it had been discovered ten years before. It was not until I850 that the publication gave any formulas for the preparation of fluid extracts. In this year, seven of these formulas were given, and by I890, the number had increased to 88,-today such extracts are innumerable.

Again, as a result of these publications, druggists, chemists and scientists cared no longer to have but a receptive attitude toward the then limited knowledge of drugs, but on the contrary, he himself began to experiment along those lines. Rather, he now had an incentive. He could probably become famous by discovering some new drug or preparation, because now his name would be included in the Pharmacopoeia, should he be fortunate enough to succeed. Needless to say, this led to innumerable discoveries along the line of new products, new methods, and new cures for prevalent ailments.

New Discoveries:

Of all the discoveries made during this period, probably the most outstanding was the discovery of organic chemistry by Wohler, in I828, when he found that urea could be manufactured artificially from isocyanate of ammonium*. This was really the first step toward the synthetic production of organic compounds.

Undue stress should not be laid down upon the wonderful advances in medical chemistry at about this same time, however. It was at the beginning of this nineteenth century that surgical anaesthetics came into being, partly as a result of the discovery of such elements as hydrogen, oxgen and nitrogen, all components of the air which we breathe daily, and partly from observations made by a florist. The latter's trade was such that it was necessary for him to have the flowers shipped from the south in freight cars. He noticed, however, that under certain conditions the flowers arrived withered and apparently dormant. He reported this fact to able scientists, who found, upon analysis of the air contained in those cars, that blossoming flowers ejected an excess of nitrogen, which compounded with ordinary air, produced a sleep-inducing substance which they named "ether". After this gas had been further perfected,Dr. Warren, of Boston, used sulfuric ether as an anaesthetic for the first time, in I805, on a patient suffering from phthisis and, in I806, used it on one suffering from asthma. Then various

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* Previously discussed, c.f. page 2.

other successful experiments were made by Ives, of New Haven; Long, of Georgia; Wells, of Hartford and Morton, of Boston, the latter being really the first who placed ether as an anaesthetic, on October I6, I846, in the Massachusetts General Hospital.

There is, perhaps, no particular in which the development of the drug industry owes its rapid rise than to the improvements in production that occured during this century. Up to this time, the apothecary was obliged to cut and roll his pills by hand and to make his plasters with the aid of a "spreading iron". He powdered his drug in a stone or iron mortar and made his tinctures in a wide mouthed jar with the aid of a stirring stick. Now, small hand-machines were being invented and introduced, an apparatus by which he could increase his production ten-fold* within the same length of time. His pills became uniform in size and shape, his plasters became standardized as to quality and thickness.

Meanwhile, scientists discovered that pharmaceutical fluid extracts could be made through a process of "percolation", commonly called displacement. This is a process by which the powdered drug, placed in a suitable vessel, is deprived of its soluble constituents by the descent of a solvent through it, thereby causing the solvent to absorb the wanted ingredients from the powder. In view of the fact that this process was essentially an American invention and that it had never been

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* Modern machines can now produce 5,000 pills per minute.

been heard of before, caused pharmacists to be rather reluctant in accepting it, and in fact, it did not become popular until ten years later, when the Pharmacopoeia gave the process its official recognition in I840. However, this publication gave no formula for the preparation of fluid extracts until I850.

Another innovation was the so-called "elixus" which was originated at some time in the later thirties. For a time, this term was used almost exclusively by manufacturers to designate their aromatic, sweetened, spiritous preparations which contained comparatively small quantities of active medicinal substances, but no formula under the name was published for the use of the people and druggists until I859.

The first sugar-coated pills made in this country were manufactured by Bullock & Renshaw, of Philadelphia, and the Tilden Company, of New Lebanon, N.Y.. The use of gelatin capsules as a means of administering nauseous remedies in a readily assimilable condition was also the direct result of American enterprise in the late fifties. This new process had originally been outlined by Mothes, of Paris, but the success attained in popularizing it was due to the efforts of H. Planters & Sons.

It is difficult for us to realize that it was not until after 1825, when the American surgeon, Beaumont, made his carefully conducted observations upon the phenomena of digestion in the stomach, that the function of the gastric juices were revealed. His investigations, which lasted until I853, stimulated and suggested the course for subsequent researches, and, in

I836, when the active principle of the gastric juices was discovered by Schuuan, he gave it the name of "pepsin". From the drug industry's point of view, the history of pepsin began with the introduction of Scheffer's pepsin, in I872. This preparation was made by a simple and practical method, developed at about that time, known as the salt process. This new process proved itself to be a great improvement over all the preceeding methods of obtaining the ferments from the stomach. A few years later, about I879, the original form of pepsin in scales, "free from added substances or reagents"*, was introduced by Fairchild, and the advent of this preparation of phenomenal strength had the effect of causing great activity in the manufacture and improvement of the commercial pepsin.

Another great development along individual lines, which carried much weight in aiding the progress of the industry, was the practical recognition and application of pancreas ferments, due to the efforts of Fairchild. In I880, he introduced the "extractum pancreatis", which contained diatase for the conversion of starch, trypsin and albumen, and to emulsify ferments for the digestion of fats. Again, in I884, he proposed methods by which cow's milk could be modified and adjusted to a closer resemblance of human milk by the conversion of caseine, through the use of trypoin, to the soluble and peptone-like bodies for which the latter milk is peculiar.

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* Premedical class notes--- I934/5/6.

The first improvement upon the antiquated method of applying plasters to the human body was the invention of an India-rubber porous plaster by Dr. Schecut, a naval surgeon. He sold his rights in the plaster to Thomas Allcock, but the latter, failing to make its manufacture profitable, sold it to Dr. Braudreth. At that time, the only commercial plasters were made of isinglass and resinous mixtures, some of which were spread on cloth and plaster skins. It was in the year I867 that Sesbury and Porter began the experiments which finally resulted in the use of rubber in medicinals and surgical plasters.

A new, distinctively American form of medication came into existence under the name of "tablet trituratus", introduced by Dr. R. M. Fuller, in I878. These were made by a method in which the active ingredients were triturated, or ground, with either plain sugar of milk, or with a mixture of sugar of milk and cane sugar, into a paste which was pressed into tablets in suitable molds. By this process it was possible to administer small quantities of such potent medicines as alkaloids, concentration, etc,. in a convenient, palatable, and readily soluble form.

Effect: Prior to the nineteenth century, druggists, as well as the people, believed that the certain simples known at the time had the inherent possibility to cure practically any ailments- the best example of which was that of "tar water", as previously mentioned-. However, these new discoveries cast those beliefs aside. Scientists realized the fact that if an

illness was to be relieved, the cause of the illness had to be found and attacked. This is what happened when they began diagnosing stomach ailments- its accompanying result was that people began having greater and greater confidence in the effects and potentialities of drugs.

The discovery of organic chemistry opened the way for experiments along that line, and commercially, the effect has been that, since that time, innumerable compounds of an organic nature have been prepared synthetically, many of which are of great industrial importance today being manufactured in extensive quantites. Among such compounds, there is one in particular, Alizarine, the chief coloring principle of "madder root", of which fully twenty million dollars worth is produced annually from coal-tar. Oxalic acid from saw-dust and caustic soda can be produced one-tenth as cheaply as it was when formally produced from the juice of sorrel. Not only has the chemist succeeded in producing many of the most important drugs and organic compounds in his laboratory however, but, during the past quarter of a century, he has discovered a vast number of new and interesting synthetic chemicals and pharmaceuticals which has never been found in living plants and animals- among them are antipyrine, monoacetosalicytic acid*, exalgine, phenacetin and others, all of which either directly or in compound enter into the manufacture of drugs. Moreover, as the num-

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* Commonly called "aspirin".

ber of these compounds, which are of great importance therapeutically, is constantly increasing and such progress which is represented by the discoveries in allied sciences has exerted a powerful influence in elevating the drug industry to its present high position.

With the introduction of machinery for the manufacturing of remedies came standardization. Such standardizing, coupled with government regulations relative to the manufacture of drugs, had a most persuasive effect upon the mind of the consumer. The people now believed and reacted psychologically to the effect that remedies were effective, clean, healthful and safe. This resulted in more sales per capita, which, in turn, increased production thereby influencing the manufacturer to increase his efficiency.

The fact that pills and remedies, which were previously unpalatable, were now being sugar-coated, capsuled and compounded appealed to the people through their sense of taste. For instance, immediately after "tablet trituratis" was introduced by Dr. R.M.Fuller, in I878, unique as was the idea, this form of administering medicine became so popular that the manufacturers began to produce them on an enormous scale, one manufacturer having no less than 500 different varieties of these tablets on his price list. The fact that the people responded to these new preparations gave the producer a more diversified line of items to manufacture and sell, resulting in the constant opening of new factories to take care of the demand that was being created at this time.

Manufacturing:

Although the first mention of drug manufacturing in the United States was made in I62I, due to its failure, no one attempted to enter in this field again until I820. At this time, through the investigations of the French scientists, the separate alkaloids in cinchona bark were determined and Pelletier soon ventured to begin their manufacture. It was about the same time that John Farr started the first quinine factory in Philadelphia. The popularity of this drug was so immediate that John Currie soon followed by building a similar plant in New York. These two enterprises were helped by United States Government when the latter immediately placed an import on any foreign-made quinine and, consequently, the manufacturers enjoyed a monopoly on its production. In I879, however, quinine was placed on the "free list" and, as a result, countries which manufactured this drug cheaper than could this infant industry sent their surplus production here, until at the present time, they have such a strong foothold that they now control nearly one-half of the American quinine market.

After the opening of the Erie Canal, in I825, these two manufacturers found their enterprise to be a very successful venture. Prior to this date, they found their market limited to their immediate vicinity due to the unreliable, primitive means of communication prevalent at the time. However, after the canal was opened, their business became very seasonal. Instead of dragging along through the year, the manufacturer

now had two busy seasons. There was a great demand for his merchandise in the spring and another rush of business just prior to the close of navigation in the fall. Their market expanded to all cities in Nothern New York State bordering the canal.

Other business men realized that a great demand for drugs and phamaceuticals was developing and proceeded to open shop. From that point on, manufacturing developed very rapidly. Among the manufacturers of medicinal chemicals that started in business shortly after I825, the following firms are worthy of mention; Larkin & Scheffer, of Saint Louis; Herf & Freichs, of Saint Louis; The New York Quinine and Chemical Work; Charles Cooper & Company and Charles Pfizes & Company, of New York; Rosengarden and Sons, of Philadelphia.

In I850 Haskell & Merrick put upon the market a select line of drugs, including morphine, chloroform, ether and galenical salts. It would be interesting to note in passing that, at this time, Philadelphia was the center of trade for English chemicals and pharmaceuticals, Boston for East India drugs, and New York for Spanish, French, German and Italian drugs and preparations. In the decade following, many fluid extracts as well as glycerine extracts were added to the list of ready-made supplies. One of the pioneers of the manufacturing of such pharmaceutical supplies was Dr. E. R. Squibb, a former assistant surgeon in the United States Navy, who organized and managed the United States Naval Laboratory from I854 to I858.

At the outbreak of the Civil War, I86I, many manufacturers either went out of business or consolidated with other producers due to the break in relationships between the North and the South. Many manufacturers in the north depended on the south for the greater percentage of their business and consequent on the hostilities between these two groups, their outstanding accounts were cancelled. However, as the conflict progressed, an enormous war demand for pharmaceuticals was created, resulting in an increased number of new factories. It was at this time that Dr. Squibb acquired his incentive for the establishment of his remarkable laboratory. Among other pioneers are: The Tilden Company, of New Lebanon; Billings, Clapp & Company and the E.L. Patak Company, of Boston; Sharp & Dolune, and the Burrough Bros. Manufacturing Company, of Baltimore; Henry Thayers & Co., of Cambridgeport, Massachusetts; William Warner & Company, John Wyeth & Bros., and the H.R.Mulford Company, of Philadelphia; Park Davis & Company, and the Frederick Stearns & Company, of Detroit, Mich.; the Searl & Hereth Company, of Chicago. The pioneer manufacturer of druggists' balances, or fine scales, was Henry Troemmer, who came to this country from Marbury, Germany, in I836, and two years later started business in Philadelphia. Prior to this time, the scales which were required by druggists had been made to order by jewelers.

The enormous increase in the consumption of medicines in the United States can well be indicated by the fact that, while the population of this country from I880 to I9I0 increased by 83.8%

the value of the patent medicines manufactured in the same period increased 740.5%. While in I889, the total capital invested in the drug grinding trade was but $338,000, That amount increased nearly ten-fold to $2,838,000 in I899,(see schedule I). The capital invested in all branches of the drug manufacturing industry amounted to $25,46I,000, in I889, while it increased to $56,I73,000, in I899, (see schedule II ).

SCHEDULE I

DRUG GRINDING

| Year | No. of Establ's | Wages (000) | Wage Earners-Av | Capital (000) | Mat.Cost (000) | Value of Prod.(000 |
|---|---|---|---|---|---|---|
| I889 | I3 | 75 | I48 | 338 | I92 | 437 |
| I899 | 26 | 292 | 644 | 2838 | 33I5 | 4308 |

Taken from- "The Biennial Census of Manufacturers" -I92I-

SCHEDULE II

INDUSTRY- ALL BRANCHES
(patent medicines, etc.)

| Year | No. of Establ's | Wages (000) | Wage Earners-Av | Capital (000) | Mat.Cost (000) | Value of Prod.(000) |
|---|---|---|---|---|---|---|
| I889 | 3,089 | 4,297 | I0,485 | 25,46I | 27,740 | 47,9I0 |
| I899 | 2,I54 | 6,9I0 | I9,028 | 56,I73 | 3I,949 | 88,79I |

Taken from-"The Biennial Census of Manufacturers" -I92I-

Effect: It is evident, from the above discussion, that during this century there was a marked emphasis on production. Marketing policies were negligible and progress along that line unthought of until after the year 1880. The demand for the product was there, the objective of the manufacturer was to produce a supply sufficient to satisfy that demand. In the last decade, however, they began to realize that their production was outrunning the market. As a result, they became no longer satisfied with their old and orthodox method of distribution, namely, from manufacturer to wholesaler, to retailer, to consumer, but began searching for new outlets and for new methods of disposing of their product. It became evident to them that over-production resulted in large overhead and inventory expenses.

Consequently, they began attacking the human element by advertising their branded-goods through the retailer. They attempted to evade the wholesaler by selling directly to those retailers doing a large volume of business. They found that mail-order houses, chain and department stores attained that purpose very well, so the manufacturer began granting them quantity discounts. Hence, the rise of chain, department and mail order drug houses during the last decade of the nineteenth century-- at the expense of the wholesaler.

to carry many articles which were not strictly entitled to a place upon the pages of the Pharmacopoeiae. In fact, this feature of the drug trade has so greatly extended that references to recent price-lists issued by the prominent jobbing houses show that there are now more than 5,700 articles in the department of drugs, chemicals, oils, etc., and close to 8,000 items in the department of patent medicines. These figures would undoubtedly be doubled were you to add druggists' sundries and "secret proprietory" medicines.

In the late seventies, however, many new firms entered the drug wholesaling field. This gave rise to a competitive condition that became so sharp that concerns which had hitherto been considered as prosperous houses found themselves unable to make a profit. As a result, the Eastern druggists joined forces with the Western wholesalers and formed the National Wholesale Druggists' Association, in I882. This organization appointed a committee to try to induce a system whereby such competition would be eliminated, thereby allowing all jobbers concerned to make a profit on their sales. A system, now known as the "rebate plan", was introduced. According to the old method, such articles as patent medicines had been sold on a very close margin, but this new plan was devised to give the wholesale druggist an opportunity to obtain a fair profit upon such preparations. By the adoption of the rebate plan, therefore, the wholesaler consented to sign a contract by

RETAILER;

As has previously been mentioned, the retailing pharmacist, in the period from I800-I850, became a producer as well as a distributor with the introduction of hand machines for the production of pills. He made his pills in small lots, packaged them in his own branded boxes, then tried to sell them at a profit. However this condition was short-lived.

On July 8, I870, the government of the United States gave manufacturers sole rights to the production and sale of new preparations formulated by them. With this right came into being "trade names" and "patent rights". Almost immediately after this preference was granted, people became so conspicuous for their faith in the efficacy of that word "patent" that retailers had to carry hundreds of such different medicines to satisfy the calls of their customers for them. They could no longer make the major portion of their own preparations but had to carry in stock innumerable different items and brands of the same remedy, such as cough medicines and cod liver oils.

To attract business, retailers began advertising these now well-known branded medicines at reduced prices. Keen competition resulted between these cut-rate independents, a competition which was gradual until I880, but which grew at a rapid pace thereafter. At first, the practise was to mark down only branded goods whose standard prices were known to the people, anticipating to make up the loss on other merchandise. But later when everyone began to follow the leader, some retailers began

cutting prices on the other merchandise also, as well as their own proprietary medicines. At that time, the retailer was in the habit of buying directly from wholesalers in small quantities- after reducing prices, however, the more prosperous pharmacist found that his volume had increased to such an extent that he could now buy his fastest selling items directly from the manufacturer, thus excluding the additional expense incurred through the middleman. The manufacturer, in turn, only too eager to increase his production and create a fast turn-over, gave these retailers quantity discounts. This placed the latter on the same par as the wholesaler insofar as purchasing power was concerned. These discounts, in turn, gave the retailers power to reduce prices on their goods still further.

The more far-sighted business men of the time began to recognize the fact that most people looked for low prices rather than service and began forming drug co-operative organizations so as to get quantity discounts from the manufacturer, in order to meet that prevalent desire of the consuming public. Thus we have the rise of co-operatives in this period, as a result of the price-cutting policies of independents and the eagerness of the manufacturers to sell in volume.

DEVELOPMENT OF THE DRUG INDUSTRY ---I900-I937

Preface:

Inview of the fact that in the course of these last 37 years the drug industry has developed into a very complicated trade, it is essential that one should thoroughly understand the various classes of drugs in order to appreciate more fully the extent to which the industry has grown. For that purpose, the various classes of drugs will be enumerated, together with their corresponding provisions as they are listed in the Tariff Act of I9I3. They are as follows;

I) the natural and uncompounded drugs, chiefly of vegetable origin, such as balsams, barks, berries and fruits of numerous plants. The drugs in either crude or advanced state are enumerated by nature or origin in the provisions of #9, 27, 477.

2) Alkaloids, glucosides and other medicinals, usually of a definite chemical character, and derived by manufacturing processes from materials within the scope of class I (above)- #5, I3, I8, 3I, 47, 70, 584, 6I6.

3) Miscellaneous natural or manufactured substances, such as certain expressed and essential oils- # 43, 46 and 56I.

4) Compounded medicinals and pharmaceutical preparations, consisting of mixtures, extracts, tinctures, pills, etc., and including the majority of proprietary medicinals, both alcoholic and non-alcoholic. # 5, I6, I7, and 249.

5) Anti-toxins, serums, vaccines and other so-called biological

products, chiefly of animal or bacterial origin. #400.

6) Organic and inorganic compounds used in medicines, such as alcohol, chloroform, ether, Epsom Salts, Gluber Salts, etc., and the coal-tar and other complex chemical medicinals, (sometimes termed synthetics). Many of these have predominate uses in chemical and technical industries. #I,8,I4,I5,I8,I9,29,65-67,I44,5I5,6I7, and 635.

It should be well understood that there is a close relationship between all the classes of drugs enumerated above. It should also be kept in mind that recently many articles foreign to the trade have entered into the drug line, such as chemicals, cosmetics, sundries, and various other articles which have, in some cases, medicainal use, but which are used chiefly for manufacturing or industrial purposes. As a result, statistics concerning the production, marketing and sale of the "purely drug line" have, many times, never been compiled, but rather, the true figures have often been included with those of sundries and chemicals. An attempt will be made, however, to break down and analyse these figures as accurately as possible to give true data relative to the "purely drug line".

Cultivation of Drugs:

World trade in crude drugs is as ancient as commerce itself. The superstitious materia medica of the past reached out into unknown corners of the earth for unknown products which derived their chief value from the mystery of their origin. The search for drugs and spices was not the least of the spurs that led to the discovery of the New World. Even now when scientific tests have discarded hosts of valueless medicinals, there is hardly a country which does not furnish somemedicinal supply. In former times, the drug trade of the world was centered in Hamburg, Germany, and this port controlled largely the commerce in Northern Europe and Northern Asia. Triesta was an important port in the in the drug trade for Southern Europe and Northern Africa, while India served as a center for Occidental medicinals. Today,London and Marseilles are centers for their respective countries, and has now taken in large part the former preeminence of Hamburg. New York has become one of the great ports for American import and export trade, and if its importance attained inthe World War continues, it appears very probable that soon New York will overshadow in importance all foreign ports.

Crude botanicals are consumed in various ways. Many such drugs, which are important in medicine, have or predominate use in all connections; for example, licorice is largely used for flavoring plug tobacco, and camphor in the manufacture of celluloid. Considerable quantities of certain drugs, such

as sanotin, are used in veterinary medicines or stock feeds. The chief channel of consumption for the crude botanical drugs today, however, is in the preparation of medicines for the treatment of human disease.

Many important drugs, such as opium, cora leaves, cinchona, nux vomica, belladonna and ipseac, owe their therapeutic value to the alkaloids which they contain. The purification of these alkaloids forms an important branch of the drug industry in which Germany, before the war, had shown some preeminence. The United States, England, France, Holland, Java, Japan and Switzerland also have well developed industries along that line. However, large scale domestic production is limited to cinchona and opium alkaloids, and to cocaine, strychnine, caffeine, emetinc and hydrastine.

Two general channels of consumption of drug products for human medicinal use may be indicated, although in some instances there is no clear line of demarcation: (I) Prescriptive medicine, in which drugs are prescribed and used under the supervision of a physician, and (2) the so-called "patent or proprietary medicines largely used for self-medication. The composition, especially the percentage content of patent medicine, is rarely made known except when required by law. Exceptions may be cited in the class known as "ethical proprietaries", whose formulae are made known to physicians, to whom they are chiefly advertised. The use of proprietary mixtures containing narcotics, whether so labeled or not, has been

proven to result in numerous cases of drug addiction. Constantsupervision is also needed today to guard against intoxicants masquerading as "proprietary medicines".

In the manufacturing of medicinals, the cost of crude drugs, ranging widely as it does from a few cents to less than one-one hundreth of a cent per medicinal dose, is usually immaterial as compared with the cost of solvents, (especially alcohol), labor, manufacturing processes, advertising and other overhead expenses. The actual cost of an available crude drug has comparatively little effect on its use as legitimate medicines, which is, therefore, unlikely to be affected by a rate of import duty comparable with those of centuries past. The choice and amount of drugs used in secret and proprietary medicines, on the other hand, is more apt to be detected by comparable cost. Many drugs, notably those of the bitter, "tonic", or "blood purifier" types have been largely used in the manufacture of proprietary compounds of the " pure vegetable product" type, whose actual effect depended in many cases on the alcohol used and the amount of advertising. The sale of such nostrums has been considerably curtailed by the Food and Drugs Act * with the Volstead Prohibition Act, together with the various postal laws.

In past tariff acts concerning crude botanical drugs, it has been the general policy of Congress to maintain differentials

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* c.f. Appendix or Discussion of Legislation

between crude drugs, ground such as alkaloids and compounded medicines.

Incidently, grinding is usually the first step in the preparation of medicines. In the United States today, this process is practised both by firms which carry on no further manufacturing and by manufacturers of alkaloids and medicinals. While the tariff differential was presumably established for the benefit of the drug grinding industry, its additional effect in hindering imports of products liable to sophistication must not be overlooked. Adulteration in ground drugs is very difficult to detect, and this, as well as the tariff differential, has tended to develop in the trade a preference for the crude and unground products. The present differential of ten per cent "ad valorem" is practically prohibitive of the entry of expensive drugs (ground) but would not be calculated to keep out cheaper materials.

Today, it is not always easy to differentiate between the crude and the advanced product. In paragraph 477* of the free list, it was provided for " natural and uncompounded drugs in a crude state, not advanced in condition or value by shreddings, grinding, shipping, crushing or any other process or treatment beyond that essential to the proper packing of the drugs, and the prevention of decay or deterioration pending manufacture". This does not require the drug to be in its crudest

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* Tariff Act of 1913.

state of occurrence or to be in initial process or manipulation in order to be classified as an item whose value has not been advanced. For example, the Court of Customs Appeal has held that gum resin reclaimed from turpentine, dirt, or leaves or insects had not been advanced in value or condition*.

The differential between the crude and ground products is not maintained in the case of crude drugs which are specifically mentioned either on the dubitable list or on the free list. Specific ennumeration permits the entry of crude and advanced drugs at the same rate. Thus the provisions for aconite, ipseac, jalap, nux vomica, salep, etc., include the articles in any form or condition under the respective names. Too, the mention of certain drugs appears to be traditional only; they are today of little or no medicinal or commercial importance and might well be omitted. No imports of Balm of Gilead and of salap have been reported in recent years, but such drugs as burgundy pitch, cocculus indicus, dandelion and marshmellow roots are quite important. As in the case of articles mentioned above, such omission, under a law otherwise similar to the present one, would probably not alter the actual income status of future imports- should any be recieved.

For tariff consideration, crude botanical drugs may be divided into three classes:

I) Exotic drugs- not commercially producible in the UnitedStates.

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* U. S. v. Sheldon, 2 ct. Cust. Appeals, 485, 490 & 492.

2) Exotic drugs-whose production in this country has been carried on only under war conditions.

3) Indigenous drugs- not produced to any important extent elsewhere than in the United States.

The last class presents no tariff problems since there are no imports. In the tariff act of I9I3, several largely imported and valuable exotic drugs were singled out for specific tax. As those have not been commercially producible in the United States, except at a high cost, the raising of revenue may be presumed to be the sole reason . The duty on those articles ranges from ¼¢ (on gentian) to I0¢ per pound (on ergot).

The annual revenue from an individual drug varies from a few dollars to over a million dollars ( Revenue collected on crude opium in I9I5 was $ I,059,0I8.). Import statistics indicate that the rate of duty has little or no effect on the volume of imports, and a consideration of the actual imposition per medicinal dose indicates no serious burden on individual consumers. The prices of different commodities vary greatly, but four dollars a pound may be taken as a limit which is rarely passed by a crude drug- a pound represents from 250-7000 medicinal doses.

In the case of drugs largely used for the manufacture of alkaloids, a rate sufficient to preserve the approximate equivalence between the crude drug and its equivalent in alkaloid, if deemed advisable, could be worked out separately for each article. A duty based on the cost of manufacturing would, how-

ever, have to be determined by separate inquiry since these costs vary considerably with different products.

It may be said that crude drug cultivation, from a commercial or agricultural viewpoint, is a relatively unimportant industry in the United States, because of our climatic and labor conditions, which has made its production practically impossible. Cultivation of botanical drugs requires a high degree of specialized agricultural and technical skill and experience, valuable land, some special appliances, and a class of labor which is much more expensive here than in Europe and Japan, where botanicals are gathered by the cheapest of peasant labor- old men, women and children. The scope of the industry is further limited by the exacting climate and the soil requirements of most of the crops, by liability to insects and also disease damage, and by a comparatively small demand, which in most cases is limited by necessity and cannot be stimulated as can the demand for foodstuffs and manufactured products.

Even when, during the World War, the demands for such products rose to unprecedented heights, it proved to be an unprofitable venture for the American agriculturist to plant certain lines of crude botanicals. Prior to 1914, experimental cultivation of a number of crude drugs had been carried on for a number of years by the United States Department of Agriculture, colleges of pharmacy, agricultural experiment stations, and by a few drug firms. Upon the outbreak of the war and the partial cutting off of imported supplies, the prices

of crude drugs rose rapidly, further accelerated by Army demands. The influenza epidemic in the United States and abroad called for enormous quantities of drugs. As a result, drug cultivation attracted considerable popular interest, and efforts were made at once to produce several indispensable botanicals which were apparently suited to American climatic conditions. Considerable success has been reported with two important medicinals, belladonna and digitalis; and also with cannabis indica, the drug obtained from Indian Hemp. Henbone, stramonium, valerian, and Levent wormseed, all important drugs, have been cultivated with varying success. The cultivation of others was undertaken on an experimental scale. However, the fact that all nations stimulated its collection at this time, 1914-1918, resulted in an overproduction of some drugs which in most cases caused a loss to growers, due to the consequent drop in price.

The cultivation of these crops in the future is not likely to be extensive. It may never become a major trade in itself due to the fact that successful crops are not possible except in the hands of specialists having adequate equipment for the proper curing of the crop and possessing special knowledge of the botanical and chemical characteristics of the drug plants. In many cases, the quality of the product must be controlled by chemical analysis or animal experimentation. Although these exacting requirements have been met in the case of certain indispensable drugs in the past, when prices were

high, the renewal of low-priced imported supplies has practically anhilated our domestic industry, even though American grown drugs, in general, are more carefully produced, better standardized and of higher commercial value than are the imports. Further renewed attempts to cultivate drugs in the future is possible, yet not probable.

Manufacturing:

With competition becoming more intense at this stage, and with new processes of production constantly being developed, the manufacturing phase of the industry has become subdivided into various branches, chiefly comprised of; I) the manufacturing of druggists' prepartions, 2) the manufacturing of patent medicines and compounds, 3) the manufacturing of perfumery and cosmetics, 4) disti ation and refining of natural and essential oils, and 5) drug grinding. Druggists preparations are products used mainly by pharmacists in compounding medicines to be dispensed upon physicians' prescriptions or orders. Patent medicines and compounds are those sold under the protection of patents, copyrights, or trade marks, or else prepared according to secret formulae, which includes medicines of a proprietary character, not necessarily patented, and boiler compounds. Perfumery and cosmetics include such articles as perfume, toilet water, toilet preparation, cold cream, etc..

Today, the manufacturer is no longer in a position to just produce his articles and turn them over to a wholesaler for distribution. He now realizes that, although the demand for such products still exists, the supply has increased with proportionately greater velocity than the demand. He realizes also that he must now create a demand for HIS product becuse he knows that his competitions are producing the same article. He can do this either through a low selling price, advertising, or by producing a distinctively superior product.

To be able to sell the goods at a lower price than his competitors, it was necessary for him to be capable of producing and marketing these items at a very low cost. In order to fulfill this need, manufacturers now standardize their methods as well as their products, attempt to secure the best and most efficient workers, maintain a cost accounting system and try to keep their overhead expenses at the lowest possible point. Probably the most stress is laid upon standardization. When the crude material is recieved from the bulk stores, a sample is immediately sent to the analytical department for analysis and approval. The quality must be exactly as specified in the purchase order, and although the foreman of the bulk department may know that the specifications have been met, still the raw material must go through a process of analysis. If approved, these materials go into process and once the batch is finished, the product itself is sent to the analytical department to be tested with regard to quality.*

At the present time, it is a rule of most of the outstanding manufacturers that every individual who has anything to do with the manufacturing process must be a registered pharmacist. The master planning, i.e., outlining the work and processes, in most manufacturing industries, is done by the engineering department, but in this particular trade this deptartment is of minor importance because it would be impossible

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* Information gathered from field trip to United Drug Co., Gr. B-IO, I936.

for an engineer to determine what could and what could not be manufactured- the only use that is made of this department is to determine the most productive lay-out within the manufacturing department. Consequently, the need of some form of planning experts has given rise to the formation of a Formula Committee which is composed of six members. A doctor of medicine usually presides as chairman of the committee while the other five members include the chief chemist, his assistant, the drug buyer, the man in charge of the technical literature and the head of the laboratory department. The duties of this committee are to investigate any formula which may have been presented to the company by a stockholder and to write formulae for new lines which the company would like to add to their existing standard line. Should a new formula be accepted and approved, a sample batch is made by the members of the committee and tested as to quality and effectiveness. If the drug is proven satisfactory, the department then draws up standard specifications stating the quantity it would be necessary to make at one time in the process of manufacture and the new equipment needed to produce it.

Once the manufacturing process is completed, manufacturers, with the aid of trade-marks, trade names, etc., package the product according to certain standard rules. This has proven to be of great importance inasmuch as the primary purpose of trade-marks and standard packaging is for identification. For example, the name Forhans', the distinctive way the name is written, the color and design of the tube and carton, and the

phrase " for the Gums" on a package of Forhans' toothpaste identify this merchandise and set it apart from all other toothpastes. Such trade-marks are chosen with great care, due to the fact that they must obtain favorable and widespread recognition to be successful. In recent years, there has been a tendency to package the product in fancy and elaborate containers. In fact, competition in package design for perfumes, for example, has resulted in the introduction of a very definite style element. Each season, manufacturers in this line introduce new designs, but the wise ones are careful to retain not only the undeniable style appeal of the new package and design, but also the ready recognition of the long established trade-marks and other means of identification.

There is no doubt but that standard packaging, as described above, is an advertising factor in itself. But aside from this, the more successful manufacturers have used other media for sales promotion. The following are the chief methods used to attain this end: 1) periodical advertising- through professional and trade journals, 2) publicity- by radio, newspaper, street car and bill-board advertising, 3) promotion by mail- usually done in periodicals, 4) sampling- divided into three groups; professional, trade and general, 5) displays and demonstrations- by furnishing the display material to the retail druggist.

As a means of attempting to lower his overhead cost, the manufacturer has devised means of increasing his turn-over, thus

reducing his inventory cost per unit. To do this, quantity discounts were given to any distributor, whether wholesaler or retailer. This encouraged the distributor to buy in larger lots, giving him, in turn, an opportunity to sell to the retailer or consumer, respectively, at a lower price. Such a practice resulted the formation of drug mutuals and co-operatives.

Schedule III, page 38, summarizes the statistics concerning the drug manufacturing industry for each census year beginning with the earliest for which comparable data are available. The manufacturing industry as a whole shows an uninterupted but irregular growth from I889- I9I9, but for I92I the figures indicate a decline. If, however, the statistics for I92I are compared with those of I9I4, the last preceding normal year, pronound increase appears, both for the average number of wage earners and value of the products. In making comparisons of the financial items for one census year with those of another, particularly in comparing I92I or I9I9 with earlier years, the effect of changes in prices and in wages must be taken into consideration. For this reason, the average number of earners is a better standard for measuring the growth of the industry rather than the value of products. It should be kept in mind that the difference in prices between the years I9I9 and I92I was largely, if not wholly, due to the termination of the World War and the consequent termination of an excessive demand for medicinals and all forms of drugs and drug products.

SCHEDULE III (a)

MANUFACTURING INDUSTRY- ALL BRANCHES
(patent medicines, etc.)

| Year | No. of Establ's | Wages (000) | Wage Earners-Av | Capital (000) | Mat.Cost (000) | Value of Prod.(000) |
|---|---|---|---|---|---|---|
| I904 | 2,777 | 7,9I4 | 20,472 | 75,607 | 39,495 | 77,94I |
| I909 | 3,642 | 9,897 | 22,895 | 99,942 | 50,376 | 9I,565 |
| I9I4 | 3,8I5 | I2,7I0 | 25,502 | I27,722 | 66,340 | I0I,032 |
| I9I9 | 3,560 | 29,894 | 38,4I7 | 278,298 | I70,I05 | 2I6,264 |
| I92I | 2,266 | 30,979 | 30,476 | * | I32,I58 | I97,979 |
| I923 | 2,2I7 | 33,202 | 34,080 | * | I59,802 | 257,077 |
| I925 | 2,243 | 35,206 | 33,20I | * | I67,786 | 304,708 |
| I927 | 2,360 | 39,574 | 35,672 | * | I77,905 | 37I,892 |
| I929 | 2,766 | 44,996 | 40,23I | * | I9I,844 | 440,28I |
| I93I | 2,052 | 34,756 | 34,987 | * | I66,769 | 337,962 |
| I933 | I,866 | 28,I24 | 30,638 | * | II5,079 | 266,89I |

* Data not available.

Taken from; " The Biennial Census of Manufacturers" - I929 -

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SCHEDULE III (b)

-DRUG GRINDING-

| Year | No. of Establ's | Wages (000) | Wage Earners-Av | Capital (000) | Mat.Cost (000) | Value of Prod.(000) |
|---|---|---|---|---|---|---|
| I904 | 27 | 483 | 98I | 4,99I | 3,024 | 5,460 |
| I92I | 28 | I,005 | I,2I5 | 2I,99I | II,556 | I6,938 |

Taken from; "The Biennial Census of Manufacturers" -I929-

WAR CONDITIONS--(1914-1918)

Before the World War, the United States was the largest producer of chemical and pharmaceutical products in the world, Germany occupying second place. The total production was estimated at $2,382 millions of dollars, (10 billions gold marks). Of this total, the United States manufactured $810 millions of dollars or 34% of the world's supply while Germany produced $571 millions, or 24%. By 1923, however, the world production rose to an estimated value of $4,288 millions with the United States still occupying first place with an estimated value of $2,000 millions and Germany at $715 millions. The share of the United States in the world total had increased to 47%, while that of Germany had decreased to 17%. The latter's relative decline was due largely to the more rapid development of chemical and drug production in numerous countries that before 1914 were Germany's best customers, but were cut off from their sources of supply during the four years of the war.

A special and very important factor that contributed to the rapid development of the American drug and chemical industry, as well as that of the French and British, after the war, was the confiscation of German patents during this time and their acquisition by our domestic industries. A striking example of this may be had if we consider the case of Bayer's Aspirins. This company was originally owned by the I. G. Farbenindustrie, of Germany, but at the beginning of the war was seized by the United States Alien Property Custodian, (at the time Mr. Francis

P. Gavan), and later sold by the government to the Sterling Company in 1919. Still another example would be the the German aniline-dye industry. More than 80% of the world production of the aniline- dyes, in 1913, was supplied by Germany. Ten years later, Germany produced but 46% of the world total, which total had remained practically stationary during that time. Germany also lost considerable ground as a producer of sulfuric acid and of superphosphate, due to the restrictions imposed upon Germany by the Treaty of Versailles.

The domestic market in medicinals was disturbed by war conditions to an unusual, if not unique, degree. This was particularly due to the fact that all lines of drug preparations in the United States draw their materials from remote and detached sources. Our drug and pharmaceutical trade is peculiarly geographic. It has been stated that a single prescription may even call upon the resources of five continents in the filling. As a result, this industry, probably to a greater degree than any other, was greatly affected by the severing of international relationships existing prior to the war.

The trade, especially that involving botanicals and their derivatives, was peculiarly unprepared for the conditions resulting from the outbreak of the European conflict. Long continued droughts had affected European crops. Added to this was the business inertia of an inaugural year and the uncertainties of the tariff revisions and banking reforms. The Mexican trouble and the continual political disturbances in the

Balkan States, with accompanying fears of international complications, had all operated to keep prices up and discourage buying beyond immediate needs. War was declared in the trough of the buying season as prospective purchasers were awaiting maturing crops and better buying terms. Too, the principle ports from which a large percentage of our raw materials were bought, namely, Trieste and Marseilles, were cut off. As an immediate result, all drug cultivation in Europe ceased, with the exceptions of Italy, Spain, Holland and Denmark.

Consequently, during the first part of August, I9I4, consumers of crude drugs began to buy all needed materials as extensively as their accounts and the supply of materials would permit. During the latter part of the month, however, moderate shipments of German goods, arriving via Holland, resulted in a general recession of prices of many European commodities which continued into September, as price conditions drew out unexpected stocks from neutral countries and confidence was restored with the growing opinion that the war would be short. Following this short recession, most merchandise in this group rose rapidly in price and early acute conditions were relieved in I9I6 and I9I7 by various market influences, the principal of which was the constant and increasing development of American manufacturing.

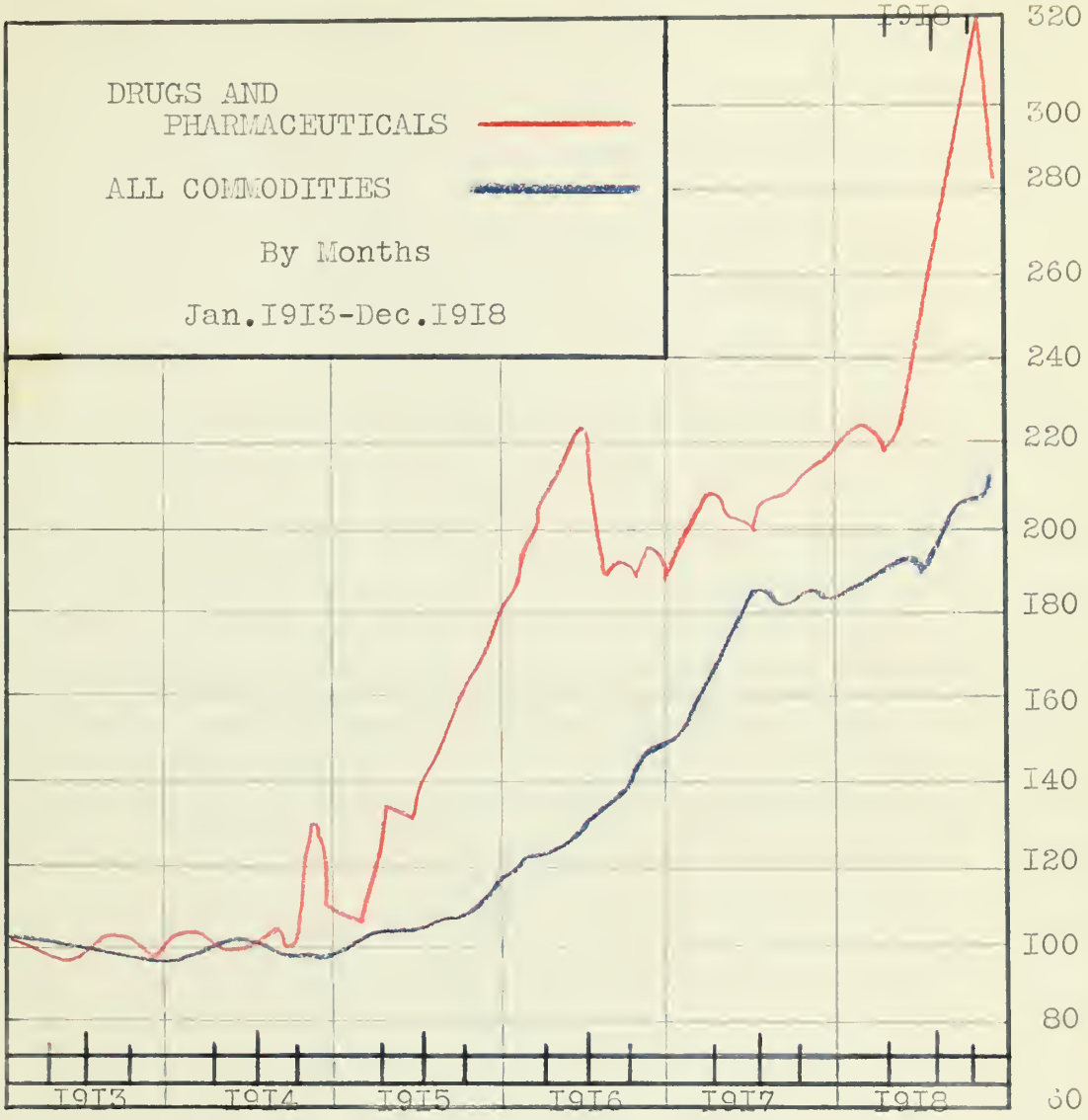
Therefore, in summarizing, we have the following influences affecting drug prices during the war period; (I) the blockade of German ports, (2) a "Wild market" with resulting spec-

ulation in existing drug stocks, (3) withdrawal of maritime commerce to war materials, (4) shipping terminal facilities couping rates, (5) labor division to military ends and, (6) government export restrictions on many forms of drugs and pharmaceuticals.

The said export restrictions were very stringent at this time. For instance, American export control limited shipments of aspirins to one hundred pounds or less after October 25, I9I7. The Wood Chemical Section of the War Industries Board in I9I9 limited the amount of acetic anhydride to be used in the manufacture of acetylsalicylic acid because of the need of such a chemical for airplane purposes, which restrictions, accelerated by an epidemic of influenza, caused prices to rise further. Bayer's aspirins, for example, which sold at thirty cents per ounce in I9I3, was advanced in price to forty-five cents in August of the year I9I4, and to sixty cents in September of the year I9I5, at which level it remained for some time. This is but one example of the war's influence on the trend of drug and pharmaceutical prices. The following schedule (p. 53) will show the price trend of drugs as compared with the general price level of all commodities during the period of the World War, I9I4-I9I8.

SCHEDULE IV

WHOLESALE PRICES DURING THE WAR *




(Weighted Index Number of Prices-
Av. Quoted Prices, July 1913- June 1914)

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* Taken from, "The United States Bureau of Domestic and Foreign Commerce- (department of Comm.)" Series 36-57,"Prices during the World War."

In spite of these restricting laws and of the difficulties that American drug manufacturers had in obtaining raw materials, figures show a constant growth of the industry during this period. In 1914, 3,815 establishments, with a production valuation of $101,032,374, were listed in the Biennial Census of Manufacturers (1921). This represented an increased value of 22.3% since 1909 and of 214.1% over that of 1889. The value of patented medicines, compounds, and subsidiary products accounted for about three-fifths of the entire value, represented by the industries engaged in such manufacturing of medicinals, drug preparations, perfumery and cosmetics. Of the above value, $83,455,264, or 83.5%, represents strictly medicinal articles- the remainder representing fire-extinguishing compounds, insectides, etc.. The value of druggists' preparations, which included materials for prescription medicines, is given at $49,375,739 for 1914. While comparative statistics are lacking, it may be safely assumed that America now leads the world in manufacturing medicinals.

However, although the drug manufacturing industry, as a whole, went into a recession after the war (1919), the manufacturers of perfumery and cosmetics showed an increase in production from 1919-1921 and an uninterrupted growth as measured by the average number of workers. Moreover, between 1909 and 1919, the rates of increase in the average number of wage earners, together with the value of the product, for the perfumery and cosmetics branch of the industry were much

higher than the corresponding rates for any of the other branches.

As we move forward to the year 1929*, we find that the volume of the drug trade in the United States can be but approximately estimated as there was a tendency at the time to combine all data relative to the production of medicinals and pharmaceuticals with "chemical production". The most accurate survey could be made only with the aid of the figures recorded by the Census of Manufacturers (1929), which broke down these combined figures and attempted to gather separate statistics relating to the manufacturing of "druggists' preparations", "patent and proprietary medicines" and " perfumery and cosmetics". Reports were recieved by 2,179 establishments whose combined products were valued at $501,976,000. Of this total number of establishments, 496 were located in New York, 278 in Illinois, 171 in Pennsylvania, 152 in Ohio, 155 in Missouri, 135 in California, 101 in New Jersey, 95 in Massachusetts, 56 in Iowa, 60 in Michigan, 59 in Indiana, and the remainder scattered among thirty other states.

The manufacturing of druggists' preparations was represented by 375 establishments with products valued at $96,715,000. Liquid preparations, such as tinctures, fluid extracts and medicinal syrups, were valued at $31,217,000; and of pills, tablets, powders, etc., at $34,675,000. The manufacturing of

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* The year 1929 was chosen because; (1) Base for index nos. is usually this year, (2) It was a peak year, (3) In this year there occurred great geographic distribution of plants.

alkaloids and their derivatives, such as cocaine, codein, morphine, quinine and strychnine, was reported by 26 establishments, with products valued at over 5,000,000 dollars. The production of synthetic medicinals preparations, such as acetanilid, saccharin, metalalicylate, etc., was included in a new classification of "liquid preparations", tinctures, etc., in which about 300 establishments engaged, with products valued at over thirty million dollars. Pharmaceutical metals and their salts, bromides, citrates, etc., engaged about 27 plants with products valued at over one million dollars. Serums, vaccines, etc., occupied about 57 factories, yeilding over ten million dollars in finished products.

The manufacturing of patent and proprietary medicines, including ammonia, insectides, fire extinguishers, etc., was carried on by about 875 concerns for the medicine trade, with products valued at $170,000,000, and by about 1,200 for the commercial compounds, with an output worth $72,000,000. The larger part of the division of the drug manufacturing trade was carried on in New York State, with over 200 establishments in Illinois, 100 in Pennsylvania, and 90 each in Missouri and Ohio.

In 1929, perfumery and cosmetics including cologne and toilet waters, face powders, cold cream, were made by 803 establishments, their output valued at $207,461,000. These figures show an advance of about 50% in the number of plants over 1919, but an increase of more than 700% in the value of

the products manufactured. New York State led in this branch of manufacturing with over 300 establishments, followed by Illinois with 100, Pennsylvania with 50, and with 45 in California.

Another branch of the drug manufacturing trade is the distilling and refining of natural essential oils, such as wintergreen, peppermint, etc., and of witch-hazel extracts. In the census of manufacturers for 1927, none of the small establishments whose yearly output was valued at less than $5,000 was ennumerated (in 1919, the number of such small concerns in operation was but 32). In 1927, there were but 14 of the larger establishments operating, with a total of 169 workers employed. The total value of the output was $4,642,000- of this sum, $3,427,000 was paid for raw materials. Incidently, this phase of the manufacturing trade is largely seasonal, most of the work being done in August and September. Today, such distillers and refiners are distributed as follows; Indiana, Michigan and New Jersey each have three plants, Connecticut has two, and New York, New Hampshire and California each have one.

As we move on into 1933, we find the manufacturing industry receding. The total number of establishments, in all branches, dropped from 2,766 in 1929 to 1,866 in 1933. The average number of wage earners decreased by 25%, while the value of the products manufactured diminished by almost 100%, (c.f. schedule III). It should be understood, however, that in 1933

we were in a depression which crippled all industries, as well as this one.

Recent attempts has been made retailers to enter the manufacturing field. Very few have proven to be successful, and, in fact, those who have made a success of it, were formerly large chains. Even many of these great chains have been reluctant to enter this field, due to the fact that great expenses are involved in creating a demand and acceptance for the products in question. They are generally not in a position to purchase the most economical quantities of raw materials, nor maintain a thoroughly qualified staff of specialists to assist in the designing, creation and development of the merchandise. Many are unwilling to gamble on the acceptability of their product by the consuming public, which may be hindered by the diversion of too much sales effort from the established brands. They realize that it takes a long time to develop a well-balanced product in order to insure repeat sales, and, therefore would rather handle established items at a slightly higher cost.

Marketing:

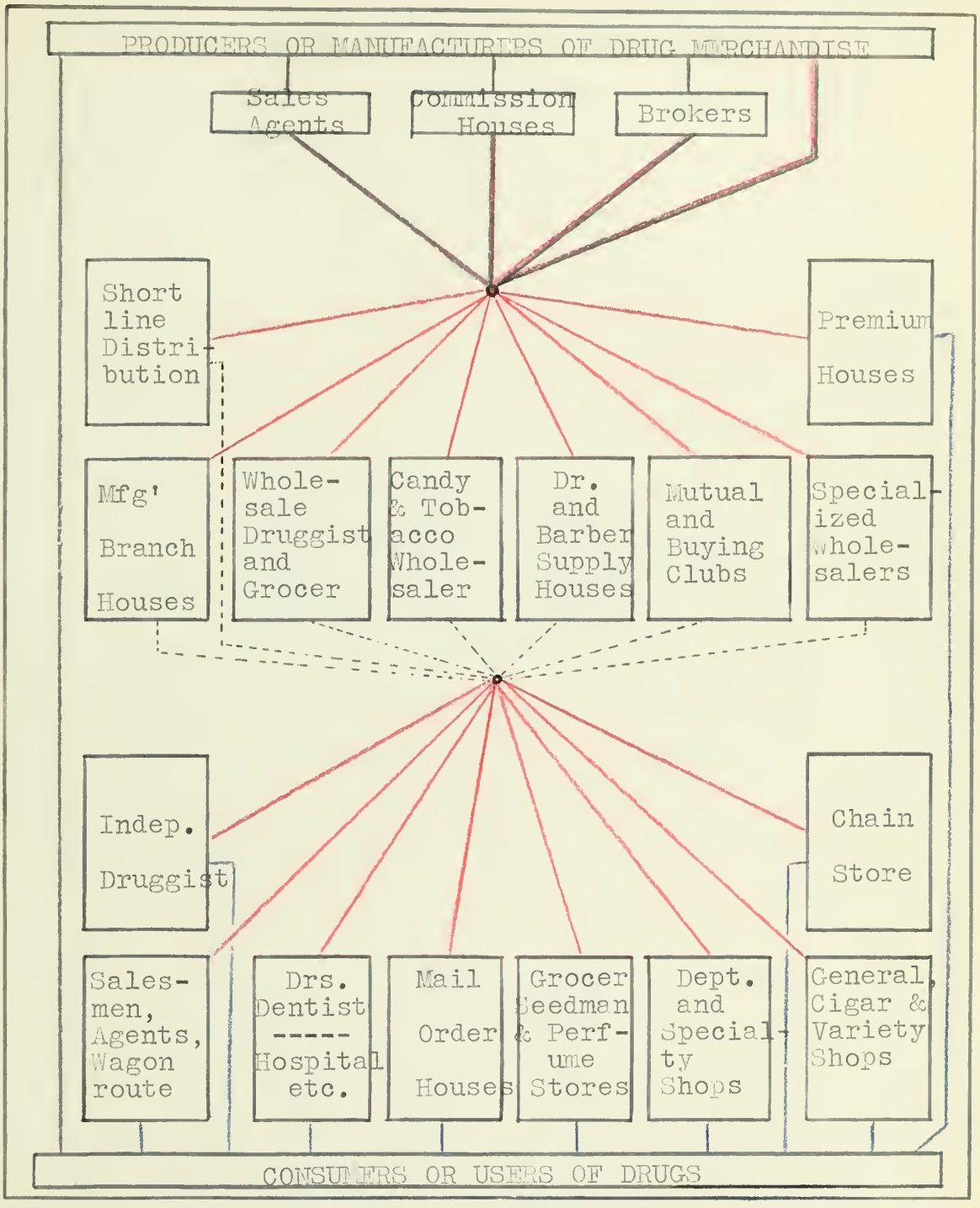
Schedule V, page 60, is an attempt to show and indicate graphically the various means by which drugs and drug merchandise can, and does, move from manufacturer to consumers. Aggressive distributors, in their effort to form what, for them, is the most effective combination of selling agencies, yeilding maximum present and potential profits, constantly test the innumerable variations possible. However, it should be understood that no generalization can be made as to which one is best- that is a matter which must be determined for each product that is to be distributed.

The mere fact that a large number of such channels is available does not mean necessarily that efforts should be made to market the product through all of them. If, let us say, a producer of medicinals sells the greater percentage of his output to wholesale druggists and retail drug stores and then attempts to sell these same products to wholesale and retail grocers, he would certainly destroy the goodwill and interest of the distributors through which he sells the bulk of his production. Likewise, a manufacturer would not find his merchandise cordially recieved by wholesale and retail druggists if he attempted to sell also to physicians' supply houses.

Therefore, it is evident that great care should be taken by a producer in the selection of a policy regarding the types of agencies he will chose for the distribution of his product.

SCHEDULE V

DISTRIBUTION CHANNELS IN THE DRUG INDUSTRY




Taken from-
"The Merchandising of Drug Products"-- By- Paul C. Olsen.

WHOLESALERS;

One of the results, as we have noted, of the Industrial Revolution, was the geographic division of labor. The problem of marketing is to get the products of one area to that of another group which has specialized in the manufacture of some other product and has none, or very little, of the goods of the first area. The aim of marketing should be to get the goods from the producer to the consumer with the least possible additional expense consistent with sales service. The function of producing goods is to give "form" utility to them, while the marketing is to give primarily the "time" and "place" utility.

There can be no question in the drug industry but that the wholesaler, just as much as the retailer, supplies the latter utility today. His stock is in the vicinity of 50,000 different articles, some from all parts of the world. This fact in itself is sufficient to explain the existence of the drug wholesaler as an important factor in the distribution of drug products, since it would be impractical for a retail druggist to attempt to buy every item in his stock directly from the manufacturer because of the fact that the cost of such a practice would be prohibitive both to the retailer and the producer.

The cost of distributing various classes of merchandise at wholesale in the drug trade shows surprising differences. Naturally, costs are higher on items of large bulk, low value, and small and slow sale, especially if they are bought by ret-

ailers in small quantities. Contrarily, the lowest costs, proportionately, are on items of small bulk, high value, and fast* and large sale, especially when they are bought by retailers in large quantities.

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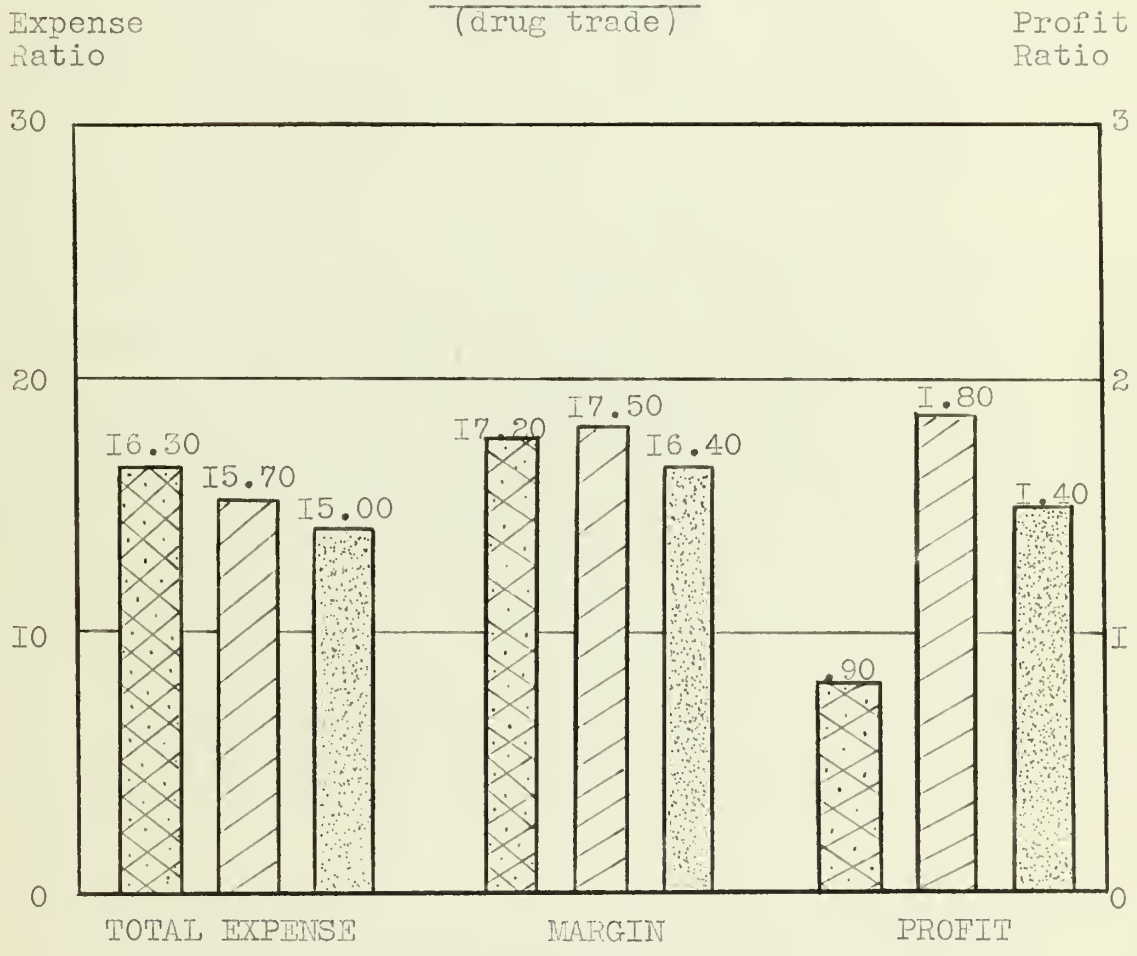
SCHEDULE VI

* WHOLESALERS' MARGIN, EXPENSE RATIO AND STOCK-TURN
(drug trade)




- Stock-turn less than 4.5 times.
- Stock-turn 4.5 to 6.9 times.
- Stock-turn 7.0 times and over.

Taken from; Report IV of "The National Distribution Conference", Cham. of Comm.

In the course of the past two decades, many wholesalers have recognized the importance of the above principles. Although it is true that they have actually carried a full line of merchandise in stock, they have retained, as much as possible, a larger inventory in fast selling, large volume items. For example, of a total stock composed of 50,000 different items, four items, including a total of fourteen sizes and styles, made up 3 and one third percent of the total sales of 118 wholesale druggists in 1928.* The fact that their volume of business was concentrated on but a few items greatly influenced numerous full-line service wholesalers to develop important and profitable laboratories for the manufacture of these products.

As a general rule, very little additional expense is incurred by the wholesaler in the production of these items. If the heads of the wholesale house are not pharmacists themselves, there are certain to be numerous such men among their employees. Practically all of the wholesale druggists' customers are pharmacists. Thus is created a situation in which the seller and buyer are acquainted by training and inclination, at least to some degree, with the technical processes of pharmaceutical manufacturing- which technical service can be had by the wholesaler at very little cost.

Other contributing factors that have led to a development along this line have been; (1) the fact that many staple drugs

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* National Wholesale Druggist Association- Bulletin no. 2 by M.J.Ostlund.

and chemicals are bought by wholesalers in containers of sizes that necessitate repacking in smaller containers for delivery to retailing customers. This means, for instance, the transfer of medicated alcohol from drums to one- or five-gallon containers. From this unavoidable repacking, it is but a step further to packing rubbing-alcohol in pint and quart bottles and labeling it with a private brand. A sales promotion plan may logically follow, (2) the increasing tendency of retail druggists to buy, ready made and ready packaged, many items which formerly were made and put up in drug stores.

However, the successful promotion of identified specialties by the wholesaler depends upon his recognition that this promotion is a group of problems entirely separate from those incident to the operation of a wholesale drug house. This usually means the development of a separate organization for this purpose. On the other hand, the supplying of the demand which exists for a variety of unidentified staple prescription and home remedies is a service that the wholesale druggist can usually perform economically and profitably with very little special facilities. In the class are such items as gum camphor, sweet spirits of nitre, camphorated oil, fluid extract of cascara, and so on through the list of readily acceptable items.

One of the most frequently considered problems in the wholesale distribution of drug products, and a problem that is of interest to both manufacturers and wholesalers today, is the attitude of wholesalers toward national brands. This attitude may be

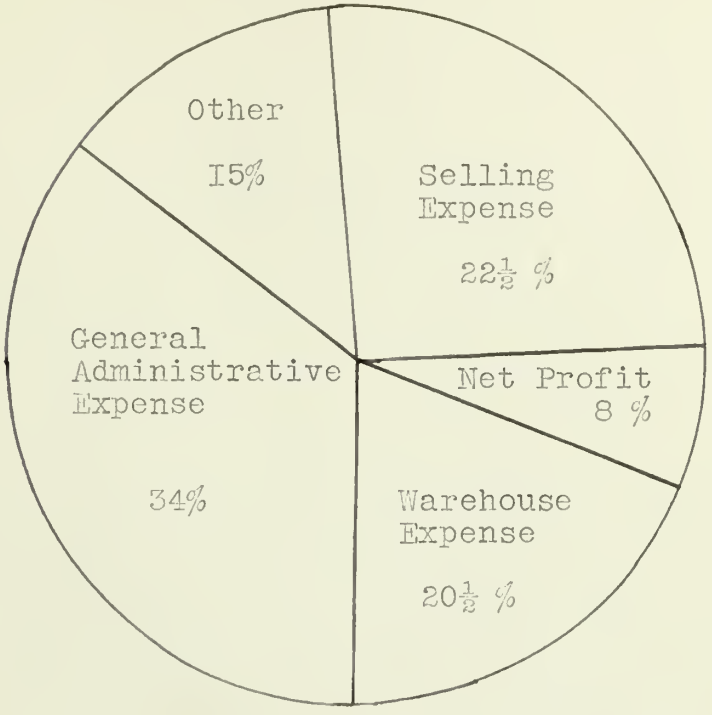
range from active opposition through complete indifference up to active, enthusiastic, and effective co-operation.

Opposition to a particular national brand may result from grievances of the wholesaler concerning the discounts allowed or proposed, or from the manufacturer's direct solicitation among retailers of orders to be filled by wholesalers, which orders are of a size and kind that cannot be handled profitably. These complaints have sometimes led many wholesalers to actually refuse to handle the merchandise, even though a manufacturer of a product that is widely accepted by consumers is not going to greatly affected by such an attitude.

Frequently, complaints by wholesalers concerning discounts are often justified. At one time, the discounts allowed to wholesale druggists by manufacturers ranged from 10-20% of the price to retailers, with an additional 2% for cash, while the actual cost of doing business in a full-line drug house was 12-15% of sales, or about 92% of the wholesaler's margin of gross profit ( see schedule VII, page 66). Aside from this, the wholesaler found that a considerable expense was incurred in trying to get the 2% discount for cash. Under competitive conditions, the middleman found that a policy of credit and collection was expensive, as well as necessary. This was a matter where extended terms of payment from the retailer imposed an unwarranted burden on him, slowing up his turn-over of capital, increasing his investment charges and thus adding to the cost of doing business. Because his working capital was tied up in his recievables, he had to

SCHEDULE VII

DISTRIBUTION OF WHOLESALERS' GROSS PROFIT




Taken from- "National Distribution Conference"; Ch. of Comm., Report IV.

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constantly borrow money from banks in order to recieve the discount, as well as to finance his customers. However, practically all manufacturers, at the time this complaint was made, agreed to raise their discounts to fifteen or sixteen and two-third percent, while others, in an effort to obtain preferential treatment for their products, offered discounts to wholesalers as high as twenty or even twenty-five percent, with the usual cash discounts in addition.

While net profits from the sale of a particular line of merchandise in the wholesale trade are determined by three factors, namely, the volume of business, the rapidity of turn-over and the discount available, it would appear that larger net net profits are obtainable if the discount is, let us say, 25% instead of 5%. This is not always the case. It is a fact that some merchandise on which there is but 5% discount may produce far more net profits than on merchandise on which the margin is much higher because of the rapid turn-over, large sales and low carrying and selling charges. A dozen of an item listed for $2.00 per dozen may frequently be sold at a profit for $I.90 a dozen, (although it rarely happens that a wholesaler gets but a margin of 5%) but the sale of the same item in one-third dozen lots at .40¢ may be hopelessly unprofitable. However, competition has sometimes resulted in the sale of popular merchandise on both inadequate margins and uneconomical quantities.

The well managed full-line service wholesaler can be successful as has been proven by the ably directed houses in the drug field. Some have successfully met price competition from direct buyers and have demonstrated to manufacturers that they can serve the retail trade for the producer as well as he himself could do it. On the other hand, some other wholesalers have consistently upheld uneconomical policies. One practice which decreases the profits of the middleman is the tendency toward too small and too frequent purchases of fast

SCHEDULE VIII

DRUG WHOLESALERS IN THE UNITED STATES

-1930-

| DATA | DRUGS & SUNDRIES (general) | SPECIAL-TIES | DRUGS | DRUG SUNDRIES | PATENT MEDICINES |
|---|---|---|---|---|---|
| No. of Estab's | 494 | 514 | 173 | 125 | 118 |
| Employees: | | | | | |
| Male | 14,158 | 3,647 | 1,830 | 550 | 462 |
| Female | 4,809 | 1,405 | 639 | 209 | 402 |
| TOTAL | 18,967 | 5,122 | 2,469 | 759 | 864 |
| Total Salaries (000) | 32,339 | 10,815 | 5,009 | 1,519 | 1,714 |
| Expense-(000) | 57,401 | 22,811 | 10,159 | 2,738 | 5,806 |
| % Of Sales | 14.10% | 23.38% | 22.48% | 17.76% | 27.22% |
| Av.Inventory (000) | 74,300 | 16,821 | 6,373 | 1,693 | 1,806 |
| Net Sales (000) | 407,192 | 97,597 | 45,195 | 15,414 | 21,328 |
| Credit Sales (000) | 319,614 | 74,000 | 35,389 | 8,847 | 17,163 |
| Sales to Consumers- Retail (000) | 1,638 | 638 | 161 | 91 | 84 |

Taken from;

" The Fifteenth Census of the United States" - 1930, vol. 2.

selling, large volume items. This practice has resulted in a situation where the wholesaler tended to increase the sales price of the merchandise to the retailer in order to make up for the loss incurred through unsound purchasing and general management policies. The retailer, unable to meet chain store prices through this increased cost, recognized the savings that could frequently be made through direct purchase of items that could be sold in the retail stores quickly and in large volume, and proceeded to either form various other types of wholesale houses or to buy directly from the manufacturer.

-Co-operatives-

Although the co-operative movement is a relatively recent development, its importance is increasing each year. It is generally conceded that the movement has been due, in large part, to the efforts made by independents to secure the same buying powers which the chain stores enjoy. It has usually been assumed that the size of the order is the one thing in which the manufacturer is interested, and that an equal discount should be allowed on orders of equal sizes.

Logical as this reason seems to be, there are two fallacies in this assumption, both of which are a part of the reason why co-operative buying associations are not as successful as those who participate in them generally assume that they will be. First, the neglect to take into consideration "increasing

costs", that is, that a continually increasing volume does not mean a continually decreasing cost, for costs decrease only up to a certain point beyond which they either remain stationary or increase. A mere increase, therefore, in the size of an order does not always justify a lower price, though many manufacturers do not realize this principle. It is true that this principle applies to chain stores just as effectively as it does to cooperatives, but here a second factor enters into the picture. The chain is capable of promising and delivering much closer sales co-operation and, too, more effective selling in all its stores than can the co-operatives, which has typically little control over its members and member stores. The mere placing of a large order by a group of stores does not mean that more of the company's product is being sold in those stores than when their small orders were recieved by the manufacturers separately. It is true that the cost of handling one large order is usually less than that of many small ones, but it is not the only concern of the manufacturer. He is interested in total costs and in the total volume of his products sold within a given period, and not only in the size of a single order. The manufacturer feels justified in giving the chain store a price advantage, because the latter is likely to secure, store for store, a much greater volume than will a co-operative group of independents.

Though a co-operative buying organization is generally thought of in connection with independents, smaller drug-chains

have apparently found some advantage in this form of buying, not to be obtained in other way. Probably the largest co-operative organization of drug chains is called the Associated Chain Drug Store, which maintains a buying office in New York City. In 1927, the membership of this organization represented thirty companies having five hundred stores, with sales of approximately $100,000,000 . In 1930, the association had 32 members with 1,200 stores.* This organization now owns the H.S.Benedict Company, Inc., of New York, and in addition to its jobbing functions, produces a number of articles under its own name which are sold both to member stores and to outsiders. The association has for its purpose, in addition, the "exchange of experiences, plans, methods, etc., and to afford full interchange of information and opinions on all subjects". The co-operative usually confines its activities to those lines in which the individual chain's volume is not large enough to allow it to get quantity discounts itself. Sometimes the pooled purchasing power will allow the syndicate to take the output of an entire factory.

The Affiliated Drug Stores is another co-operative drug-chain organization having about thirty members with five hundred stores. Its members are smaller organizations, and it may assumed that they buy a much greater percentage of their total volume through the co-operative than those belonging to the

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* "Chain Store Age" VIII, Feb. 19, 1931- no. 2.

Associated Chain Drug Stores*.

The majority of products purchased co-operatively by the chains are standard merchandise not subject to such capricious demands as that of novelty and less standardized goods, while the situation is somewhat different in the case of independent co-operatives. In the latter case, the tendency is for the co-operative buying office to discover novelties and sundry items for sale and to urge the independent merchants, who have little chance to scout for such articles, to handle them. Typically, this class of merchandise is very profitable but must be selected with care as to kind and quantity, otherwise profits of many sales are dissipated on one poor buy or on carrying surplus stock. The co-operative buying office is in a much better position to make the selections than are the individual merchants for whom they act.

Aside from this advantage in co-operative buying, the independent has others, the most important of which are;

(I) There is created through co-operatives a more centralized control of finances, advertising and inventory,

(2) Selling can be made more effective through coordination- it affords the retailer an opportunity to get a maximum turnover and a minimum inventory.

(3) It affords the retailer an opportunity to recieve the benefits of the organization's product testing and, possibly,

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* "Chain Store Age", VII - Feb. I93I.

manufacturing laboratories.

(4) He can obtain the merchandise at a lower "net" purchase cost.

The extent of co-operative wholesaling to independents in the drug trade, at the close of the year 1927 may be summed up as follows; there were twenty-six co-operative wholesalers, supplying 15,000 independent druggists with $50,000,000 worth of merchandise. In other words, 30% of all the independent druggists were buying about 12½% of all their drug store merchandise through these wholesalers.

However, co-operative buying activities of both independents and drug chains are not important in comparison with the total volume of trade done. For the most part, the organization formed to carry on the work of the syndicate is small, consisting of a manager with, perhaps, an assistant or two. The manager acts as the purchasing agent and buys only on specific instructions from members. Only when members agree to purchase certain goods in co-operation by taking, for example, a certain percentage of the output of a factory, are they bound to purchase anything through the syndicate. In other words, members place their orders much as they would with a jobber to whom they specify the price, although usually such co-operatives are not operated for profit. A near relative of such co-operatives is the Mutual Wholesaler who not only operates on a non-profit basis but who goes even further in giving to members all profits acquired during the year.

-Mutual Wholesalers-

The basic difference between co-operatives and the mutual wholesalers is one of degree rather than one of kind. The latter, in order to keep operating costs at the lowest possible point, employs no salesmen, issues no catalogues or other advertising materials and carries in stock only merchandise which sells quickly and in large volume. The interest which a retail druggist member feels in a wholesale house, of which he is part owner, is depended upon to bring to it the bulk the bulk of his purchases in the items it carries, without further solicitation or advertisement.

Another factor that helps to reduce costs still further is the policy of cash sales or rigid and short term credit. Even the operation of the credit system serves to provide the organization with the necessary working capital at little or no cost. For instance, The Philadelphia Wholesale Drug Company ( a mutual house ) requires that a retail druggists, who wish to make purchases there, first deposit $300 with the company, on which deposit he recieves no interest. All purchases must be paid within one week. If they are not paid then, a penalty of 2% is added to the bill- if the druggist again fails to pay for the following week's purchases, he is automatically barred from the further credit. The $300 is a protection being more than sufficient to cover a possible indebtedness.

"Full-fledged" Mutual houses are usually co-operative in

the sense that the year's earnings, except possibly a small reserve, are returned to the members at the end of the year in proportion to their purchases. This basis of distribution appears to be most logical since members are usually allowed to have only one vote or share in the organization and it, therefore, would be unfair to the large purchaser, who probably makes it possible for the organization to keep their figures in black ink, to recieve but a proportionately small part of the net profit. However, other mutual drug houses follow the policy of making prices to members as low as possible. That is, they attempt to set prices on merchandise which will make receipts just sufficient to cover their total costs, and still leave a small reserve. In this way it is generally believed that any savings made possible by buying from them become immediately apparent that these savings are equally distributed in accordance with the volume of purchases.

Although such a system of co-operation is very effective in many cases, still the popularity of such organizations is not so widespread as it could be. Probably the most important reason for this situation is "poor management". The organizations try to save money by employing inefficient men at low salaries. The person who has executive ability and enough energy to conduct a wholesale drug house successfully, usally prefers to start, or become an employee, with an organization in which he can earn not only a salary, but share in the profits created by his efforts. Such an incentive of

"profit sharing" by the Lanagement is usually absent in Mutual houses with the result that the greatest amount of productive effort is not exerted by the Management.

Retailing:

Since it is usually too expensive and too troublesome for the drug manufacturer to sell "direct", or for the consumer to buy "direct", for personal consumption, the service of the retailer is really to assemble at convenient points, from numerous sources, the various kinds of drugs and sundries which consumers demand. The retailer enables the consumer to purchase a variety of goods in small amount, on short notice, and with a minimum of trouble. Incidental to this service, the retail druggist must finance these operations, bear the risks involved and create a demand for his services.

Important developments of the last half century have had a marked effect on both the methods and policies of retail drug stores. One of these developments is the improvement of transportation and communication. Because of these changes, it is now unnecessary for the retail druggist to stock heavily in normal times. By merely calling, telegraphing or writing a nearby distributing agency one can start his needed goods on the way. There is thus made possible to the retail druggist a very close correlation between supply and demand.

Rapid progress in drug manufacturing has likewise had marked effects in the retail field. New preparations, new prescription and new patented medicines are constantly brought on the market, either as modifications or duplications of items already on the market or to meet heretofore unrecognized wants . With

the development of manufactured pharmaceutical products, much of the time that the druggist formerly spent in preparing prescriptions and providing remedies is no longer needed for that purpose, and as a result, he has become more largely a distributor of pills and patent medicines. On the other hand, modern manufacture has provided the drug store with such side lines as toilet articles, photographic supplies, stationery and candies of all kinds.

The development and increased use of national advertising by drug manufacturers and wholesalers has so stimulated the demand for certain products that the retailer is often forced to carry them against his will, in order to keep the trade of customers who are induced to call for the items by the sales efforts of their producers. These advertisers have made the druggist's position even more difficult by trying to educate the public against the substitution of other goods for the advertised product. This, of course, increases the variety of goods that the druggist must handle and slows up his turnover, thus increasing his operating expenses.

Finally, the development of branded goods, as well as advertised and packaged commodities, has also affected retailing. It has removed much of the trouble of weighing and packaging, has rendered it easier to keep the store neat and sanitary, has changed the selling problem by making sale through name and description take the place, many times, of the unaided

efforts of the druggist. This development has also removed from the retailer a large amount of the ultimate responsibility* for the quality of the drugs delivered.

In spite of these advantages, the retailer is the most expensive unit in the distribution of drugs for personal consumption, recieving 34% of the consumers dollar as compared with the II% acquired by the wholesaler. Figures of this kind show nothing of themselves concerning the effectiveness of the retailer but they do show, however that we, as well as the manufacturer, pay heavily for the retailers service. Furthermore, the range in expenses of drug stores, of substantially the same character, is so great as to warrant the belief that a large percentage of our drug stores are operated at an excessive cost.

Since the retailer is the last and probably the most important step in the movement of merchandise through the distribution channels, any inefficiency on his part tends to offset any economies previously made by the manufacturer and the wholesaler. Such waste in the retail distribution of drug products reflects itself, therefore, not only in the profits of the retailer but also in the sales and profits of manufacturers, wholesalers and all others directly or indirectly concerned. It seems only natural, then, that the manufacturer is willing to allow a premium to the most efficient type of

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* For responsibilities of retailers, see page II2.

distributor in the form of discounts. This willingness on the part of the producer fostered the development of various types of retail establishments, the most outstanding being:

(I) The individually owned drug store

(2) The chain drug store

(3) The mail order house

(4) The department store.

## INDIVIDUALLY OWNED DRUG STORES

As clearly shown by an analysis of retail trade statistics, ( see schedule IX, page 81), the unit drug store is today the prevailing means of retail distribution in the United States. The reasons for the strength of the unit store in its competition with chain stores, department stores and mail order houses may be described as follows;

(1) Convenience to the customer- the fact that the usual purchase in a drug store amounts to about 50¢ is a great indication that drug store purchases are merely casual ones, purchases that a person is not justified in going far out of his way to make, even for the sake of saving a few pennies. This is well illustrated by the "corner drug store".

(2) Complete stocks- prosperous neighborhood and city drug stores usually have a more complete stock than has the average department store, mail order house and chain store. There is a greater tendency for the unit store to carry a more complete line of novelties than do the chains.

(3) Personal service- the personal service of the proprietor to the public frequently results in his building a strong personal clientele.

The same sources however point out various disadvantages of the unit drug store, the most important ones being;

(1) Management- the individually owned drug store is liable to be poorly managed. Although this is not necessarily an

inherent weakness, it is a common one.

(2) Trade area- the limited area from which the neighborhood druggist can draw his business. This condition very often precludes the possibility of a large business.

(3) Advertising- newspaper advertising cannot be used to the best advantage, for the cost of effective advertising, in view of the limited patronage, is often too large in proportion to sales to warrant the expenditure.

(4) Purchasing agents- purchasing weakness is probably the greatest disadvantage of the unit drug store. Because they buy in relatively small quantities, the buyers of such small estab-

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SCHEDULE IX

THE DRUG RETAIL TRADE

(I933)

| TYPES | Total Number of Stores | Total Net Sales (000) | No. of Proprietors (000) | Total Payroll (000) |
|---|---|---|---|---|
| Independents | 53,34I | 788,568 | 56,433 | 9I,524 |
| Chains | 3,760 | 267,299 | I40 | 32,8I6 |
| All Others | I,360 | I0,385 | I,I76 | 2,I64 |
| TOTALS | 58,46I | I,066,252 | 57,749 | I26,505 |

Taken from; "Statistical Abstracts of the United States" I936 ed.

lishments are not able to keep in close contact with market prices of drugs, and unlike chain stores, department stores and mail order houses, are not capable of taking advantage of any favorable market variation.

Perhaps the most difficult retail function of the independent druggist is buying since his service is to assemble goods for the dispersion to his personal clientele at the latter's convenience and momentary demand. It is generally agreed that the safest buying policy, with respect to individual items, is one which contemplates the purchase of not more than one or two months supply of the merchandise needed at one time. This is not always practical, however. An unfortunate tendency in the buying policy of many independent druggists is to buy popular and readily salable merchandise in too small quantities, and merchandise that is difficult and slow to sell in too large quantities. This weakness could be easily overcome would the independent realize what an important part that stock-turn plays upon his net profits.

Recently, there has developed a tendency for retail druggists to recieve a great deal of assistance in selling from manufacturers and jobbers. A part of this is direct, as illustrated by some of the forms of dealer co-operation: window cards, display materials, circulars of manufacturers giving to the independent advice on selling, accounting and other retail problems. Some assistance is indirect, the chief item of which

is the "national" advertising of drug manufacturers. In so far as the manufacturers' efforts are really effective in linking the independent with the demand created, the latter's selling problems are made easier. The dealer can now exert less effort in the sale of the advertised goods, since the demand is created to a large extent by the manufacturer, and give more time to become active in influencing people to demand HIS services in rendering the advertised goods to them. But to the extent that all independents, as well as other forms of retail dealers, equally recieve the benefits of such advertising, it simply means that a force of competition is felt at other points, especially as to selling policies.

This competition is by no means detrimental either to the consumer or to the manufacturer. The consumer benefits through lower prices, better service and cleaner stores. The manufacturer in turn benefits through larger sales. Because of this competition between independents, and independents with chains, the retailer has resorted to use more effective layouts and more suggestive displays. They have realized that the more merchandise there is to be seen in a retail drug store, the greater the opportunities for the quick and profitable sale of that merchandise. The usual drug store carries in stock from I0,000 to I5,000 different items of merchandise, and since people who come into a drug store therefore cannot be acquainted with all the different kinds of merchandise it has

for sale, druggists use displays as an effective means of bringing the merchandise to the attention of customers and prospective customers. Such a medium is evidently beneficial both to the producer of the goods and the purchaser of the goods.

There are five major types of individually owned drug stores in the United States today. A brief description of each type will suffice.

(I) Center Drug Stores in Cities;

The average volume of sales done by some stores is about $85,000 a year upward. Such a large volume permits the store to obtain a turn-over of about once a month, thus decreasing the total cost of operation. However, this advantage is offset by the exorbitant rent charges and large personnel payroll.

The number of drug stores of this type in the United States is relatively small, probably due to the fact that suitable locations, locations which make the store easily accessible to a large number of people, are limited in number.

(2) Neighborhood Drug Stores in Cities;

The usual volume of sales done by these stores is about $20,000 a year. This type of a store has many advantages the principle ones being- a low initial investment (about $6,000), the proprietor is in a position where he can establish a good personal clientele, low labor cost. These advantages are often offset, partly at least, by the manotony of long hours and

tedious work.

This type of drug store is the most popular in the United States today, as well as the most numerous. This is probably due to the fact that it is, of its very nature, largely a convenience store. There is a great demand among the consuming public for this service, with the result that stores of this type are established at all points where it is believed that it will be accessible to a relatively large number of people.

(3) Small City Drug Stores;

Like the neighborhood store, these drug stores in small cities usually have a sales volume of about $20,000 a year. The proprietor of such an establishment has the advantage of a low rent charge. The rate of turn-over ranges usually from two to three times a year. Such a low rate is probably due to the fact that such stores often carry a very diversified line of novelties together with such items as seeds, fertilizers, lamps and new fads. Many of these side lines are very seasonal and therefore such stock that is carried over from season to season decreases his rate of turn-over.

A very large proportion of the drug stores in the United States are found in these small cities. In fact, 76% of all the drug stores are situated in cities of less than 10,000 population. Such a high percentage is only natural since almost half of the total population of the United States still live on farms or in cities of under 2,500 population.

(4) Suburban Drug Stores;

These stores cater to the more wealthy people in suburban and residential communities. It is easy to see that such stores must base their sales appeal on quick delivery, extensive credit and a very efficient telephone order service. Their stock must be varied and exacting, which means that the stock turn-over is very slow.

Although the total cost of operating such an establishment usually runs into high figures, the mark-up on goods sold is higher. Since these stores are usually located at considerable distances from city districts, they have little or no competition. The volume of business amounts to a figure considerably above that of most drug stores, even reaching $100,000 a year.

(5) Professional Pharmacies;

Such drug establishments recieve their income by performing professional services, filling prescriptions and selling sick room supplies. This type of drug store is relatively unimportant in the United States today. In fact, they number but about 2,000.

These stores are usually located close to physicians' center, acquiring their business mostly by filling out doctors' prescriptions. It is evident, therefore, that the owners of such establishments try to obtain the interest and goodwill of physicians.

A relatively recent development in the drug retail trade is the installation of fountains to attract customers. Historically, the fountain grew directly out of the prescription department. Not so many years ago, carbonated water was dispensed in drug stores as a remedy for indigestion and other ailments. After a few years, the beverage possibilities of carbonated water was discovered and it began to be customary to carry a few flavors in this connection. Thus the fountain and luncheonette of today came into existence by a long series of steps, and even at present, the change of style in fountain fixtures is so sudden that such fixtures suffer great risk of becoming obsolete long before they have served their full period of usefulness.

Such a risk however pays good dividends. It has been shown* that 26.I % of every sales dollar of a drug store comes from the fountain, the department that yields the highest sales (see Schedule X, page 88). It has been tabulated that out of every II80 persons entering drug stores, 590, or 50%, go directly to the fountain. That the fountain is a great attraction is proven by the fact that 238 persons out of the 590 mentioned above go to other departments after they leave the fountain.

There are about 60,000 retail stores in the United States today with individually owned stores making up about 97% of this total. In I935, these stores, combined, sold over a billion dollars worth of merchandise. Although the independent

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* U.S. Domestic Commerce Series- I932, Doc. 57-66.

druggists sold 300% more merchandise than did the chains, sales per independent store averaged but $25,000 while those of chain stores averaged nearly $85,000 per store.

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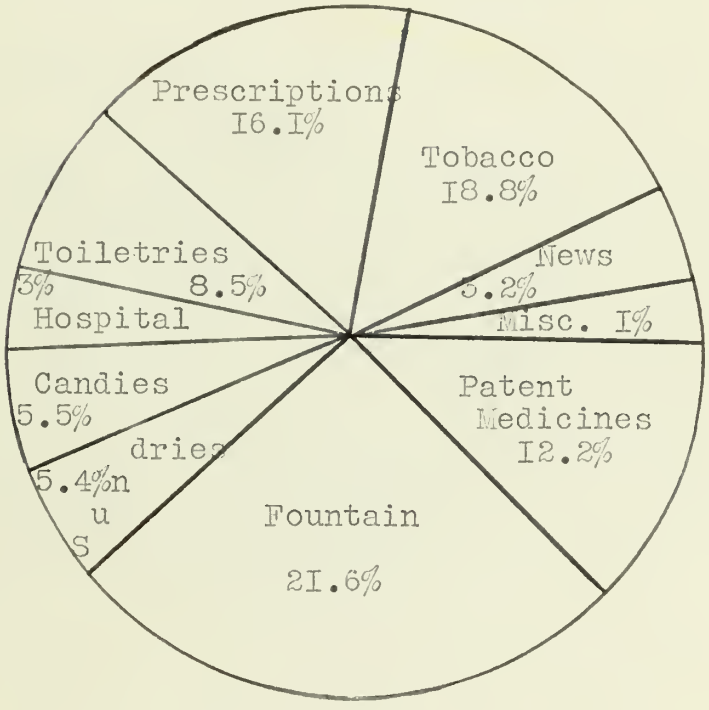
SCHEDULE X

DRUG STORE SALES DOLLAR

(April I93I- April I932)




Taken from; "Costs, Sales, and Profits in the Retail Drug Store" Dom. Comm. Series- Doc. 90.

SCHEDULE XI

OPERATING EXPENSES IN RETAIL DRUG STORES

-1919-

(Net Sales- 100 Per cent)

| Items | Common Figure in 1919 |
|---|---|
| Net Sales | 100.0 % |
| Cost of Merchandise sold | 66.0 |
| Gross Margin | 34.0 |
| Total Salaries and Wages | 15.6 |
| Advertising | 0.7 |
| Boxes and Wrapping | 0.6 |
| Delivery | 0.1 |
| Office Supplies and Postage | 0.3 |
| Rent | 2.8 |
| Heat, Light and Power | 0.8 |
| Taxes | 0.4 |
| Insurance | 0.4 |
| Repairs on Store Equipment | 0.2 |
| Depreciation on Store Equipment | 0.6 |
| Total Interest | 3.1 |
| Losses from Bad Debts | 0.3 |
| Miscellaneous Expense | 1.5 |
| Total Expense | 27.6 |
| Profit | 6.3 |
| Stock-turn (Times a Year) | 2.3 |

Taken From;
The "National Distribution Conference"
vol. IV, p.29.

## CHAIN DRUG STORES

The idea of operating a number of retail units by a centralized management is not new, even though its introduction into this country upon a large scale is so recent that agitation against its form of retail organization has not, as yet, entirely subsided. It is probably correct to say that those who began this chain movement had no idea that they were creating systems which would have the far-reaching economic consequences they have had.

The chain store era in the United States began just previous to I900, even though its great development has come since that time. One reason for its rise, as previously mentioned, was the price-cutting war that developed among the independent retailers of the late nineties; while, another reason is the result of a peculiar situation arising from the very nature of a drug store business. The average sale in a retail drug store ranges from twenty cents to about eighty cents, with the most usual figure running at about fifty cents. The fact that the usual purchase amounts to but fifty cents is a mathematical indication that purchases in drug stores are mostly casual ones, made at the most convenient place. This means that the area from which a drug store can draw its business is limited by the comparative accessibility of other stores offering similar or identical merchandise .

As a result of this, a druggist reaches the limit of profitable expansion of his store when additional expenditure of

capital and labor does not return, proportionately, additional sales due to the limitation of his area of trade. A prosperous druggist would believe, for instance, that the principles and methods he has used to make his store successful can be applied to another store with equal success. A second store is established or purchased, and if this one, in turn, proves to be a profitable enterprise, he proceeds to open a third-- and so on. Soon he finds that he is in a position to establish favorable purchasing relations directly with the manufacturer of his fastest selling items.

There is no doubt but that the rapid growth of chains has been made possible through the purchasing advantages which they possess, which advantages are largely ascribed to the fact that they buy in larger volume than do their independent competitiors. On the other hand, it might be thought that, in purchasing such large quantities of merchandise, these drug chains would run a great danger of loss through fluctuating market values. As a matter of fact, this possibility has probably been reduced by the chains more than by any other agent engaged in marketing activities. In the first place, retail prices usually fluctuate less rapidly than wholesale prices, and since the chains buy only for short periods in advance, the possibility of disposing of merchandise before a change in price is greater than it might otherwise be. Yet, in the drug trade, the very presence of the chain stores has made retail prices exceedingly sensitive to

changes in wholesale prices, especially when the trend is downward. The policy of some drug chains is to reduce their retail prices as soon as wholesale prices are reduced rather than to wait until the stock on hand is exhausted, whereas in a rising market, prices are not advanced on competitive goods until it is necessary to purchase additional stock, for drug chains, like other retailers, are generally reluctant to raise prices.

In the second place, the drug chains have succeeded most remarkably in getting the manufacturer to bear the market risks caused by fluctuating prices. The purchasing contract usually calls for the manufacturer to guarantee to the chain that if, after an order has been placed, prices fall, the manufacturer will refund the difference between the original purchase price and the new price. In some instances, this refund is made on merchandise still in the chains' warehouses, although sometimes it applies to undelivered goods only. On the other hand, if prices rise after the chain has placed an order, the manufacturer agrees to bear the loss*.

Some may wonder why manufacturers should be willing to take such chances and agree to such contracts. There are two reasons; (I) they are so anxious to secure the chain's business that this concession offered by one manufacturer is necessarily offered by competitors who hope to retain or

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* The manufacturer may not bear the risk, of course, if he has hedged, or has purchased his raw material at the time that the contract was made.

secure a part of the business, and (2) such a guarantee induces the chain to order in advance, thus enabling the manufacturer to plan his production more satisfactorily.

Although the chain stores buy a vast majority of their merchandise directly from the producer, a considerable amount of business is given to wholesalers and jobbers (c.f. Schedule VIII). They are used by chain drug companies under such conditions as the following;

1) In emergencies,

2) In buying items, the sales volume of which is small,

3) In case a "full line" buy is necessary from the manufacturer and it is not advisable from the standpoint of the chain, and

4) Where merchandise can be obtained only from the wholesaler.

The drug chains, today, usually make arrangements with local jobbers in the cities in which they operate to supply their units whenever they order. Thus, when the chain unit has exausted its supply of an item and delay in shipping from the company's warehouse is unavoidable, the stores are usually authorized to order from a specified jobber. In some cases, the sales volume of certain articles is so small that the chain can make no savings from direct buying. Sometimes manufacturers specify that the complete line (say of shaving materials) must be ordered, whenever any item in the line is wanted, if additional discounts are to be given. Very often one item in the line will sell faster than the rest, and,

SCHEDULE XII

SOURCES OF SUPPLY FOR SPECIFIED PRODUCTS PURCHASED BY CHAIN DRUG COMPANIES *

| COMMODITY | NO. OF REPORTS | ALL CHAINS | |
|---|---|---|---|
| | | % PURCHASED FROM | |
| | | MFG'ERS | WH'LSERS |
| Photographic Supplies | I5 | 83.4 | I0.3 |
| Stationery | 26 | 69.8 | 30.2 |
| Candy and confectionery | 64 | 68.0 | 32.0 |
| Rubber goods | 22 | 67.6 | 32.4 |
| Hospital Supplies | I9 | 63.0 | 37.0 |
| Toilet articles | 84 | 56.9 | 42.5 |
| Fountain and lunch | 69 | 55.0 | 44.I |
| Drugs | I34 | 40.0 | 58.4 |
| Sundries | 62 | 33.2 | 66.2 |
| Proprietaries | 68 | 33.5 | 65.7 |
| Tobacco Products | 86 | I8.6 | 80.6 |

* 72d Congress, Ist session, Senate Document 30, p. 54, Table XXIV

rather than order the whole line thus creating a surplus of certain stock, the chain will order the one item from the wholesaler. Lately however, there has been a tendency for producers to break down these lines and sell individual items to chains, regardless of the size of the order.

Drug chains, it was reported in I924, purchased less than one-fifth of their merchandise from the jobber, while the average independent store bought approximately 60% of its needs from that source*. Of I32 drug chains reporting to the Federal Trade Commission Survey**, I2I, or 9I.7%, purchased from manufacturers; 7, or 5.3 %, from growers; I5, or II.4 %, from brokers; I32, or I00%, from wholesalers; I0, or 7.6 %, from other sources. Again, drug chains reported that 78.3 % of their purchases came from manufacturers and 20.4 % from wholesalers. The remaining I.2 % came from brokers, growers and other sources.

A practice which has become quite common among chain drug companies is engaging in the manufacture of their fastest selling items. Although this practice is popular, it has not developed to a very great extent as measured by the proportion of total store sales to their own manufactured products. In I933, there were 3I of I44 drug chains in the manufacturing business, but only three of these produced more than 25 % of the goods sold in their stores, while the proportion of all

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* Harvard Business Review III, no. I,(Oct. I924) 69ff.
** 72nd Congress, Ist Sess., Senate Doc. 30.

drug chain sales so manufactured was only I3.5%. In I930, the total sales of goods manufactured by chains were $28,588,000 distributed as follows:

Chains having;

| | |
|---|---|
| 2 to 5 stores - manufactured | .4% |
| 6 to 50 stores- manufactured | 3.9% |
| 5I to 500 stores- manufactured | 58.0% |
| Over 500 stores - manufactured | 37.7% |

Of the total sales made by these manufacturing chains, but 86.4% were made in their own stores while I3.6% were made to wholesalers.

Many of the drug chains have entered into the manufacturing field, because for the most part, the organization of such a subsidiary (or department) is exceedingly simple, since the manufacturing processes themselves are very elementary. Its organization may consist of a manager or foreman at the head of laboratory activities, who is usually a chemist or laboratory specialist. To aid him is an assistant and the factory employees. This is all the organization needed since the purchasing department and the factory output is taken by the company's stores. Financing and accounting are also handled by the proper chain departments and headquarters.

Aside from this advantage, there are many reasons why management officials of drug chains have found it desirable to manufacture;

(I) Profits-- Manufacturing gives the chain a chance to secure additional profits without a corresponding increase in

the risks of business. The percentage of profits to be obtained from the manufacture of certain toilet and proprietary products is enormous (for example, the percentage gross profits to sales ratio obtained on Bay rum is 62.2 %, on toilet water is 63.7 %, on Glycerine is 64 %*).

Another factor which makes the chain's own manufactured goods profitable to handled is the possibility that exists for controlling resale prices. Direct competition is not encountered in the sale of this merchandise and a price may be established and maintained which will yeild a satisfactory profit.

(2) Simplicity of manufacturing operations-- The simple process involved in manufacturing some of the most profitable merchandise is one very important reason why the chain has been able to engage in this activity. Some of the operations which are classed as manufacturing are little more than packaging and labeling operations on which large profits can often be made, as in the case of bottling bulk alcohol.

(3) An assured market-- Because the chain is in control of its outlets, it is sure of being able to push a large quantity of its own products into the trade trough; in relation to total sales, though, the amount is usually small.

(4) Inability to secure a satisfactory supply of a commodity-sometimes the chain manufactures a product for which it has

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* Samples picked at random from Catalog.

been unable to secure a satisfactory source, probably due to an inability to get the item at a desired price and in the desired quantity.

(5) To improve quality-- Another reason advanced by chains for engaging in manufacturing is the necessity of improvement and the control of the products which they sell. Chain chemists assert that chemical tests often show that the goods made by their company are superior in quality to those manufactured by others which sell at a higher price.

(6) Prestige-- Chains believe that customers are likely to be favorably impressed with the size and importance of a concern having its own branded products.

Although most drug chains have found it desirable to control some of the products which they sell, the ratio of the sales of such products to total sales is rather small. Even the Liggett Company, the most successful manufacturing chain, estimates that the volume of its own goods is not more than 19-20 % of the total sales.

It is impossible to predict with accuracy how far the drug chains will attempt to go in their efforts to produce the commodities which they sell, but it is certain that they have not reached the limit of their expansion in this direction. The Chicago purchasing agent for the Owl Drug Company frankly admits that his company intends to produce more and more items as long as profits warrant. He states that manufacturers who aid in the growth of drug chains are likely to be creating

additional competition for themselves. Expansion along this line is a natural development, according to this purchasing agent, because a company controlling a large number of outlets is sure to seek control over products being sold in them whenever it is their financial interest to do so.

It is much easier for the chain to engage in manufacturing activities than for the producer to engage in retail activities because; (a) the problem of manufacturing is simple compared with that of retailing, (b) the chains have the most desirable locations, (c) it takes a large amount of capital to develop a chain of retail stores in a wide area and the manufacturer setting out to develop his outlets will be handicapped, whereas capital requirements for the manufacturer of drug store products are small, (d) a producer who attempts to enter the retail market himself would stir up much opposition and would likely lose a good part of his present market.

On the other hand, there are certain disadvantages which confront the chains when they contemplate producing their own goods; I.- these goods must be displaced to be sold, yet a window of "own goods" merchandise does not attract as many customers into the store as a display of nationally known brands, 2.- their own brands require much more time and sales effort on the part of clerks because they are not so well known, 3.- these often prove embarrasing to the chain when an agreement with manufacturers of competing products is being considered, and sometimes stand in the way of complete cooperation.

It is doubtful whether the drug chains will ever be able to manufacture a large percentage of the products which they sell because, first, the demand created by manufacturers for their products cannot be successfully resisted in the stores, and, in the second place, a great variety of merchandise, of the novelty and sundry type, must be constantly secured and no one company is likely to find it possible to create these new products.

From the purchasing and production operations of the drug chains, let us direct our attention to the selling policies of such organizations. The main objective of the company is to get a customer in the store, and to attain this end, use price-cutting as their greatest weapon. However, such price reductions are confined to nationally advertised brands and trade-marked goods, upon which a retail selling price has been set by the manufacturer. Periodically, one-cent sales are made on these items, whose standard prices are known to the public, which are very cleverly executed. For example, Lambert's Cough Syrup ordinarily sells at all drug stores for 39¢ per bottle, although the price on the bottle is marked 50¢. While a one-cent sale is in progress, the price will be reduced to two bottles for fifty-one cents, or one bottle for fifty cents- thereby giving the public a reduction of but thirteen cents on a bottle, (most probably a higher figure than the gross cost to the chain) while most people really believe that they pay but one cent for the extra bottle.

Naturally, this will attract the public's attention, and, although the store makes little or no profit on this item, it will attempt to use their attractive displays as a means of inducing purchases on other commodities, the sale of which bears a profit.

Drug store statistics* show that chains in the retail drug business have increased I20% from I9I9 to I928. In the latter year, ten percent of the total number of chains were drug chains, while 3.2 % of all chain stores were drug chain stores. In this same year, there were I79 drug chains with a total of I,994 stores, operating in forty-five states, the largest number being in New York, Ohio, Illinois, California and Pennsylvania, respectively. Of a total number of II8 chains, 32.6 % had sales of from $I00,000 to $249,999 annually, while 3I.6 % had sales of from $50,000 to $I00,000 per year-- the aggregate sales were $I2I,677,475*, an average of $I06,828 per store.

In I935, the net sales of the United Drug Company alone amounted to $82,739,760, while in I936 reached a peak figure of $88,464,982. If one were to add the net sales for I936 of the Sterling, Inc., to those of the United Drug, he would get a figure almost equal to the aggregate sales of all chains made in I928. These two companies alone sold, in I936, $II9,7I5,37I worth of merchandise, thus showing that drug

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* Eastern Drug Market, I928.

** A letter from "The Chairman of the Fed. Trade Comm." I928

chains are by no means receding in relative importance.

There has, since the late twenties, developed a "buy- at-home" movement which is likely to have an adverse effect upon chain drug stores, particularly the national chains. The basis of these emotional appeals is to "keep the money circulating in our own town, and don't send it away to make some big city millionaire richer". Fortunately for the chain, few people are sufficiently interested in the welfare of the local business man to be willing to pay them a bonus in the form of higher prices for the merchandise they sell. Thus the chain drug store, basing its sales appeal largely upon price, has been able to get around this local prejudice to a remarkable degree, so much so, that even the proprietors of individual drug stores, bitter in their complaints "chain stores", are often found to be regular patrons of chain grocers or chain hardware stores.

Exports and Imports:

The basic reason why we must become foreign traders in drug commodities resides in the irresistible action of the economic law of supply and demand. Prior to I820, before the advent of the American drug manufacturing industry, we find that crude drugs were imported in relatively small quantities, while exports of prepared pharmaceuticals were practically nil. But since I900, we have reached a stage where our productive capacity is such that we normally have a constant surplus beyond our needs. The output of American drug manufacturers is now greater than that of any other country, which degree of development we have seen to be a direct result of the stimulation of European demands upon us during the War.

Although it can be said that within the confines of continental United States are produced all of the absolutely essential articles required, as food, clothing and shelter, for the population, such self-sufficiency is not present in the case of drugs. We have always imported more crude botanicals than we have exported, although not always in the same proportion. While in I922, for example, we imported but 25% more than we exported, in I934 the proportion became almost six to one.

On the other hand, since the United States has become the leading drug manufacturing country in the world, we find that it exports medicinal preparations, perfumes and cosmetics in tremendous quantities, far in excess of the imports of such

SCHEDULE XIII

EXPORTS AND IMPORTS OF DRUGS
- UNITED STATES -

(by years)

| DATE | EXPORTS | | | IMPORTS | | |
|---|---|---|---|---|---|---|
| Year | Medicine Preps. (000) | Crude Drugs (000) | Perfumes etc. (000) | Medicine Preps. (000) | Crude Drugs (000) | Perfumes etc. (000) |
| 1912 | 7,608 | -*- | 1,280 | 1,642 | -*- | 1,810 |
| 1914 | 6,521 | --- | 1,514 | 735 | --- | 2,360 |
| 1916 | 8,294 | --- | 3,526 | 393 | --- | 3,371 |
| 1918 | 10,824 | --- | 5,903 | 1,336 | --- | 3,180 |
| 1920 | 21,215 | --- | 8,740 | 900 | --- | 6,967 |
| 1922 | 14,196 | 3,214 | 15,223 | 4,763 | 4,880 | 8,684 |
| 1924 | 17,441 | 3,543 | 15,985 | 4,777 | 7,902 | 6,596 |
| 1926 | 19,677 | 3,578 | 17,069 | 5,891 | 9,221 | 6,602 |
| 1927 | 20,552 | 3,273 | 17,170 | 5,423 | 9,034 | 8,197 |
| 1928 | 20,103 | 3,587 | 15,721 | 5,179 | 10,858 | 7,121 |
| 1929 | 21,282 | 3,690 | 16,059 | 6,422 | 10,581 | 6,988 |
| 1930 | 17,610 | 2,576 | 13,972 | 4,948 | 7,678 | 4,785 |
| 1931 | 15,036 | 2,413 | 11,282 | 3,792 | 5,925 | 3,064 |
| 1932 | 9,966 | 1,183 | 6,422 | 2,530 | 5,005 | 2,038 |
| 1933 | 9,816 | 1,267 | 5,436 | 3,568 | 5,045 | 2,205 |
| 1934 | 10,945 | 1,650 | 6,180 | 4,237 | 6,547 | 3,238 |

* Data unavailable.

Taken from; "Statistical Abstracts of the U.S." 1912 to 1936
Dept. of Comm.

items (see schedule XIII). In 1915, manufactured drugs, together with chemicals, occupied sixth place in the volume of the export trade of the United States- steel and iron acquiring the highest figure.

That crude botanicals should be largely imported and that manufactured drug products should be largely exported is a natural result of our peculiar division of labor in the drug trade. High labor cost coupled with unfavorable climatic conditions does not permit profitable cultivation of drugs in the United States. Relative scarcity and relatively high cost of domestic drug products necessitates the importation of crude drugs. On the other hand, with highly developed machines and great men of science at our disposal, we have found it profitable to manufacture these medicinals in larger quantities than the American public could consume, thus commanding an export trade in such manufactured goods.

EXPORT SALES ORGANIZATIONS;

There are two methods of marketing manufactured drug products in foreign countries. The first is through export commission houses and other middlemen. The second is by the direct sale of the product from the manufacturer to the foreign customer. These customers may be wholesale importing and distributing houses handling one or more lines of merchandise, wholesale or retail drug establishments, or the ultimate consumer. Instead of using the sales organization of the export house,

the direct exporter devises and controls his own methods of reaching the buyers of his products, thus assuring a market.

A recent practice that has developed among the large industrial drug corporations is to establish separate sales corporations in foreign countries to conduct their export business. Such subsidiaries are established to reduce export taxes. It is often the policy of foreign countries to tax firms doing business in their territories on their total capitalization or profits. However, if a subsidiary is established as a foreign corporation in the particular country where it is doing business, it will be able to sue in the courts of that country to protect its rights. Unless it is so organized it is likely to be denied that right. For tax purposes, it will be necessary to disclose the financial statements of only the subsidiary sales corporation, instead of both the subsidiary and the parent firm.

Another plan for developing export business, adopted by a number of smaller drug companies, is to appoint an export firm to handle its sales. In most cases the latter assumes the role of an independent contractor rather than, in the legal sense, an agent. For this reason, the manufacturer is not affected by the taxes imposed upon corporations doing business in that particular country. Protection of the courts is obtained through the export firm. The corporation usually sends one of their men to work for the contractor to insure the proper sales of the merchandise.

Legislation Governing the Drug Trade;

STATE AND LOCAL LAWS-

For the protection of the life and health of the consuming public, each state now has laws providing for a State Board of Pharmacy, consisting usually of five or six members, in most cases appointed by the Governor of the state. In many states no wages are paid these men, while in others, members recieve from five to fifteen dollars per day while actively engaged in the work of the Board. All members must be registered pharmacists, and some states even require a five or ten year period of active practice preceding the appointment. In many cases, teachers or instructors of pharmaceutical schools are not eligible for appointment or membership.

The duties of the State Board vary in certain states, but generally speaking, they must make such by-laws and regulations as are necessary:

1) To regulate the practice of pharmocology
2) To regulate the sale of drugs, chemicals, medicines and poisons
3) To regulate the employment of apprentices and employees in pharmacies
4) To regulate the working hours and sleeping apartments of employees in pharmacies
5) To regulate and control the character and standard of drugs and medicinals compounded and dispensed in the state, to employ inspectors and chemists, to secure samples and to

prevent the sale of such drugs, chemicals, medicinals and poisons as do not conform to the formulae, standards and tests of the Pharmacopoeia and Formulary.

6) To regulate the retailing of poisons and adopt schedules

7) To issue temporary permits limited to definite areas

8) To investigate alleged violations of the provisions of it, this article, to conduct hearings in respect thereto when it appears to be necessary, and to bring to bring the same to to the notice of the attorney-general.*

To enumerate all the state and local laws would be practically impossible. Suffice it to say that all men engaged in the making and distribution of drugs and drug preparations must obtain a licence from the state board, subject to revocation. Such a permit may be revoked for any of the following reasons; I) Failure to pay the required fee; 2) Upon proof that the dealer is so addicted to the use stimulants and narcotics that it may render him unsafe to handle or sell drugs and poisons; 3) Upon proof that the dealer is not of good moral character; 4) If the person is not actively engaged in the practice of pharmacy; 5) Fraud in the representation of his skill or ability; 6) Use of untruthful or improbable statements in his advertisements; 7) Distribution of intoxicating liquors or drugs for any other than lawful purposes; 8) Willful or repeated violations of this title, the title of "Public Health" or

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* New York State Laws- I927, c. 85

the rules of the State Department of Health; 9) Continued practice while knowingly having an infectious or contagious disease; (IO) Unlawful sale of cocaine or too the conviction of an offense involving turpitude.

During the past few years, more and more states have passed a law requiring all pharmacists to have in their drug store a copy of the latest revision of the U. S. Pharmacopoeia and the National Formulary. For instance, in Iowa, the statute reads " There shall be kept in every place in which drugs or medicines are compounded a copy of the latest edition or revision of the U. S. Pharmacopoeia and National Formulary, which books shall be subject at all times to the inspection of the pharmacy examiners".*

Retail Druggists---

Among the various laws of the different states, the following may be said to be the essence of all government regulations with regard to retail druggists: I) At least one registered pharmacist must be in the retail store at all times; 2) If the store is owned by a corporation, at least one of the stockholders must be a registered pharmacist, (Prior to I928, Pennsylvania had a law requiring all stockholders to be registered pharmacists- this was declared unconstitutional in I926).** 3) In nearly all states, retailers must have a copy of the latest revision of the Pharmacopoeia; 4) All prescriptions that get

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* Iowa Code, I904, # 3I50
** Liggett Co. v. Baldridge, 278 U.S. 49 S.Ct, 57, 73 L. 204

into the hands of the druggist must be filed and reserved; 4) Such drugs as cocaine and its allies cannot be sold except on prescriptions, which prescriptions must be kept on file, usually for a period of five years, and that no such prescriptions may be refilled, nor any copy of it given to anyone except when needed for court purposes; 5) Labels should be placed on all bottles, boxes or mediums of packaging wherein are contained any drugs or preparations. On the labels should be written the name of the medicine; 6) No druggist shall give medicinal advise to a customer unless first notifying the latter that he is not acting as a doctor in the case but merely in an advisory capacity; 7) The registered pharmacist shall be responsible for the mistakes of any/all of his clerks.

If the customer asks for a patent or proprietary medicine, and the druggist delivers the medicine called for, in the original package, accompanied by the directions of the manufacturer for its use, the druggist is not liable for any injury that may result from its use. The fact that he is a vendor of the drug does not bind him to analyze the contents of the package. If on the other hand the druggist have knowledge of the ingredients and know them not to be as represented, or any other danger was involved in the sale of the patent medicine, his failure to protect the consumer might constitute negligence. However, the fact that the retailer is not responsible does not relieve the manufacturer from responsibility.

Manufacturers and Wholesalers:

By law, the person who compounds the drug is in a position of great responsibility toward those who use it. This refers not only to the retailer but, even to a grater degree, also to the wholesaler and manufacturing druggist. The latter is liable to a purchaser from a retail druggist for the injurious consequences of a mistake in the preparation, even though the article may have passed through a number of intermediate hands. The very nature of the business makes it a reasonable rule that the ultimate consumer may bring action against the manufacturer, bottler or packer of products sold by a retailer in the original or sealed package or bottle for the injuries arising from the use of such products.

Summarizing the various national and state laws concerning the liability of both the wholesaler and manufacturer in the sale of his products, we would have the following list:

I) Liability of manufacturer to ULTIMATE consumer,(a) on theory of tort, (b) on theory of implied warranty, (c) for injury caused by the use of the patent medicine, (d) on explosion of chemical disinfectants.*

PRICE FIXING AND RESTRAINT OF TRADE:

Has the manufacturer, producer or wholesaler a right to control the resale prices of his products? Today, the answer to this question depends largely upon the methods employed to achieve this end. The following conditions may be stated:

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* Wt. Rawleigh Co. v. Schoultz (C.C.A. 1932), 56(2d), 148

I) Where a "bona fide" relationship of agency exists, resale prices may be controlled through agreements with, or instructions to, agents.* But the agency must be one in fact and not in name only. Where title to the goods has passed to the jobber or dealer, he will not be conidered the agent of the manufacturer under an agreement to maintain resale prices.**

2) Resale prices can be controlled through announcing a price policy and refusing to sell to price cutters, where no agreement to maintain prices has been entered into and where the methods used to enforce price control do not amount to an implied contract.*** Where, however, the manufacturer attempts to control resale prices by entering into an agreement with all or a controlling number of dealers in a community, such agreements have been hald invalid as unlawful restraints of trade. The fact that goods are manufactured by special processes or by secret formulae, or are patented, copyrighted, or trademarked, is immaterial in considering the validity of a contract imposing conditions as to resale prices after the right of sale has once been exercised by the manufacturer,**** neither can he create a contract relationship between himself and a third person into whose hands the goods may come by attaching a printed notice to the goods or on a label, imposing conditions in attempting to control the resale price in the hands of any fut-

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* Cole Motor Car Co. v. Hurst (C.C.A. I9I5) 228 F. 280
** U.S. v. Kellogg Corn Flake Co. (D.C.I9I5) 222 F. 725
*** U.S. v. Colgate, (I9I9)
**** Dr. Miles Med. Co. v. John D. Parks & Sons, 220 U.S. 373

ure purchaser of the goods.

The foregoing may seem like an academic discussion at present when ruthless competition and its attendant price-cutting is no longer considered an unmixed social blessing. Tha anti-trust laws, both federal and state, were in a state of virtual suspension a few years ago, partly as a result of the neglect of the codes of the recent N.R.A. to take these into consideration. It wasn't until I937 that interest in the subject by the American government was revived.

However, a contract in restraint of trade can be made and enforced if its terms are reasonable and if it seeks to accomplish a lawful end. Contracts are generally upheld as valid when they are agreements, " I) By the seller of property or business to compete with a buyer in such a way as to derogate from the value of the property or business sold; 2) By a retiring partner not to compete with the firm; 3) By a partner pending the partnership not to do anything to interfere, by competition or otherwise, with the business of the firm; 4) By the buyer of property not to use the same in competition with the business retained by the seller; 5) By an assistant, servant, or agent not to compete with his master or employer after the exploitation of the affairs and the expiration of his time of service. Before such agreements are upheld, however, the court must find that the restraints attempted thereby are reasonably necessary (I,2 and 3) to the enjoyment by the buyer of the property, goodwill or interest in the part-

nership; or 5), To the possible prevention of injury to the business of the seller from the use by the buyer of the thing sold; or 6) To protection from the danger of loss to the employer's business caused by the unjust use on the part of the employee of the confidential knowledge acquired in such a business." *

HARRISON ANTI-NARCOTIC ACT:

This is " an act to provide for registration of, with Collectors of internal revenue, and to impose a special tax upon all persons, who produce, import, manufacture, compound, deal in, dispense, sell, distribute or give away Opium or Coca Leaves, their salts, derivatives, or preparations, and for other purposes." **

Although this Act is in form a revenue act, the enforcement of its provisions has proven to be productive of a number of social and moral benefits, some of which have been; I) The restriction of the distribution of narcotics to medicinal uses, 2) the careful and proper supervision of the traffic in such drugs, 3) a minimizing of the spraed of drug addiction, and 4) the accomplishment of certain moral benefits. This act, by the way, was declared constitutional in the year I9I8. ***

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* Taft,C.J. in U.S. v. Addyston Pipe and Steel Co. (I898)- 85 F. 27I, 79; C.C.A. I4I, 46- L.R.A. I22.
** December I7, I9I4.
*** Hughes v. U.S., C.C.A. I9I8- 253 F. 543.

FEDERAL FOOD AND DRUG ACT:*

Its scope is to prevent the manufacture, sale or transportation of misbranded, adulterated or deleterious foods, drugs, etc.. It applies to food and drugs which are being imported into the United States; or exported or offered or subject to exports to foreign countries; or shipped or delivered for shipment between states and/or territories, and/or District of Columbia- or manufactured or sold or offered for sale in the District of Columbia or any other territory in the U.S."

Bills presented to the 73rd Congress and the hearings upon those bills indicate certain weaknesses in the Present Food and Drug Act, the chief criticisms being that, I) there is no control over the advertisements of drugs not on the label or in the package, 2) there is no regulation of mechanical devices sold for the alleviation or cure of disease, 3) there is no control over the labeling of cosmetics, hair dyes, etc., and 4) the insufficiency of the word drug.

IMPORTATION OF NARCOTIC DRUGS:**

Statute; " It is unlawful to import or bring any narcotic drug into the United States or any territory under its control or jurisdiction; except that such amounts of crude opium and coca leaves as the board finds necessary to provide for medicinal and legitimate uses only----------and for the manufacture of heroin. All narcotic drugs imported under such reg-

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* Taken from-- Custom House Guide- I937 ed.
** 2I U.S.C.A. # I73

ulations shall be subject to the duties which are now or may be imposed upon such drugs when imported."

EXPORTATION OF NARCOTIC DRUGS:*

Statute;"(a) It shall be unlawful for any person subject to the jurisdiction of the United States government to export or cause to be exported from the United States, or from any territory under its control or jurisdiction, or------, any narcotic drugs to any other country. Narcotic drugs, (except smoking opium and opium prepared for smoking, the exportation of which is absolutely forbidden) may be exported to a country only which has ratified and become a party to the convention and final protocol between the United States government and other powers for the suppression of the abuses of opium and other drugs, commonly known as the International Opium Convention of 1912, and then only if (1) such a country has instituted and maintains, in conformity with that convention, a system, which the Board** deems adequate, of permits, or licenses for the control of imports for such narcotic drugs; (2) the narcotic drug is consigned to an authorized permittee; (3) there is furnished to the board proof deemed adequate by it that the narcotic drug is to be applied exclusively to medicinal and legitimate uses within the country to which it is exported, that it will not be reexported from such country and that there is actual shortage------- for the drug---------".

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* 21 U.S.C.A. #182
** "Board" now refers to the Commissioner of Narcotics.

CONCLUSION:

In the light of the preceding discussion it is not difficult to see that this industry, like many others, found its opportunity for birth through the demand of the people for drugs. This naturally led to a cultivation of crude botanicals in order to satisfy that demand, which, in turn, led to the manufacture of these raw materials. As the number of producers increased, so did the supply of medicinals increase, leading to a differentiation of products. When the merchandise became so differentiated by manufacturers and a demand created for it, an endeavor was made to hold that demand through a process of individualization which fixed the particular brand, rather than the general type of drug, in the mind of the purchaser.

Out of this condition rose the wholesaler whose function was to assemble under one roof the different branded staples for distribution to druggists in small lots. The wholesaler, partly because of his poor management and partly because of the willingness of the manufacturer to grant quantity discounts, found himself competing with chains. The latter's main objective was to evade the additional cost incurred by the middleman in the distribution of drug merchandise. The success of these chains led to a co-operative movement, the originators of which had as an objective the acquiring of quantity purchase discounts from the manufacturer in behalf of the independent retailer . Thus was

ibution.

Undoubtedly, our present marketing process is very expensive. In the case of drugs it probably amounts to 50 per cent or more of the price paid by the consumer. Furthermore, the few facts at hand show that there are wide variations in the expenses of competing firms, particularly in the retail field. Such data as are at hand indicate that for many retail druggists there is a great opportunity for improvement. Valuable work is now being done by educational institutions, manufacturers, jobbers and by retail associations in educating the retailer to better methods. The larger market organizations seem to be operating more effectively, but the data for comparison are meager. It is evident that what is needed is to continue with, and to further develop, the work of the various agencies, public and private, which are directed toward the improvement of the methods of retail drug merchandising.

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